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TWENTY-FOURTH ANNUAL REPORT

OF THE

HEALTH DEPARTMENT

40043

OF THE

CITY OF BOSTON,

For the Year 1895.



BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1896.

ORGANIZATION OF THE HEALTH DEPARTMENT.



SAMUEL H. DURGIN, *Chairman.*

GEORGE F. BABBITT,

EDWIN L. PILSBURY.



CHARLES E. DAVIS, JR., *Secretary.*

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HEALTH DEPARTMENT, OLD COURT HOUSE,
BOSTON, February 1, 1896.

HON. JOSIAH QUINCY,

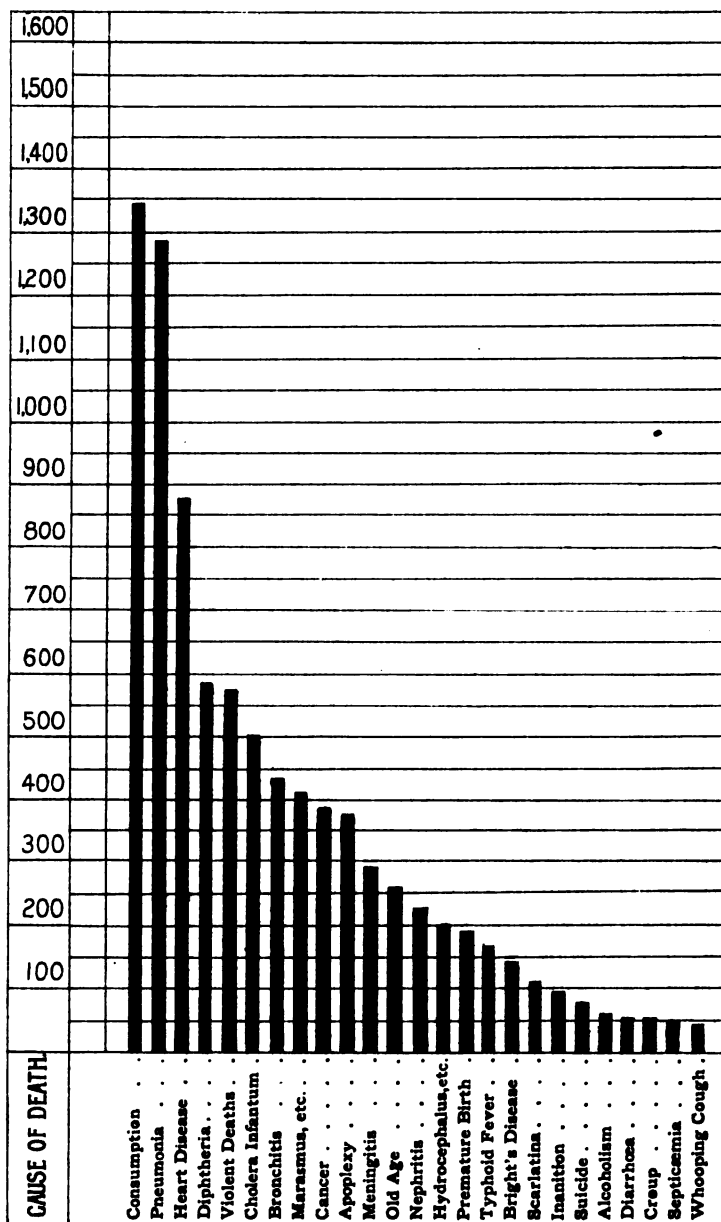
Mayor of the City of Boston:

Sir: The Board of Health respectfully submits its twenty-fourth annual report, covering the work of the Health Department for the past year, together with a statement of the receipts and expenditures of the Department from February 1, 1895, to February 1, 1896.

The total number of deaths for the year was 11,329, a decrease from the previous year of 191 deaths. The population, as estimated at the end of the year, is 501,083, which is based on the geometrical rate of increase between the last two census years, 1885-1895. The death-rate for the year, as calculated on this population, is 22.60 per 1,000 inhabitants. This rate is less by .38 than that of the previous year, and the lowest since 1889. There were 1,968 deaths from zymotic diseases, which is a reduction of 389 deaths from the same group of the previous year, and this reduction is chiefly accounted for by the falling off in the number of deaths from diphtheria. There were 229 less deaths from this cause than in 1894, although the number of cases of diphtheria reported was largely increased on account of the larger number discovered among the pupils in the public schools by the medical inspectors of schools, and the bacteriological tests in the otherwise unrecognized cases. The ratio of deaths to the number of cases of diphtheria reported has been reduced by more than one-half. There were 114 deaths from scarlatina, 78 less deaths than in the preceding year, and 120 less than the average of the three previous years. Typhoid fever caused 163 deaths during the year. Forty-nine of the deaths from this cause occurred during the months of August, September, and October, and 95

of the whole number died between the ages of 20 and 40 years. There were 19 deaths from measles during the year. The number of deaths of children under five years of age was 3,935, compared with 4,108 for the previous year, showing a falling off of 173 deaths or .93 per cent. of the total mortality. The respiratory diseases are still the most fatal, causing fully 27 per cent. of the whole mortality the past year.

Comparative View of Twenty-five of the Principal Causes of Death during the Year 1895.

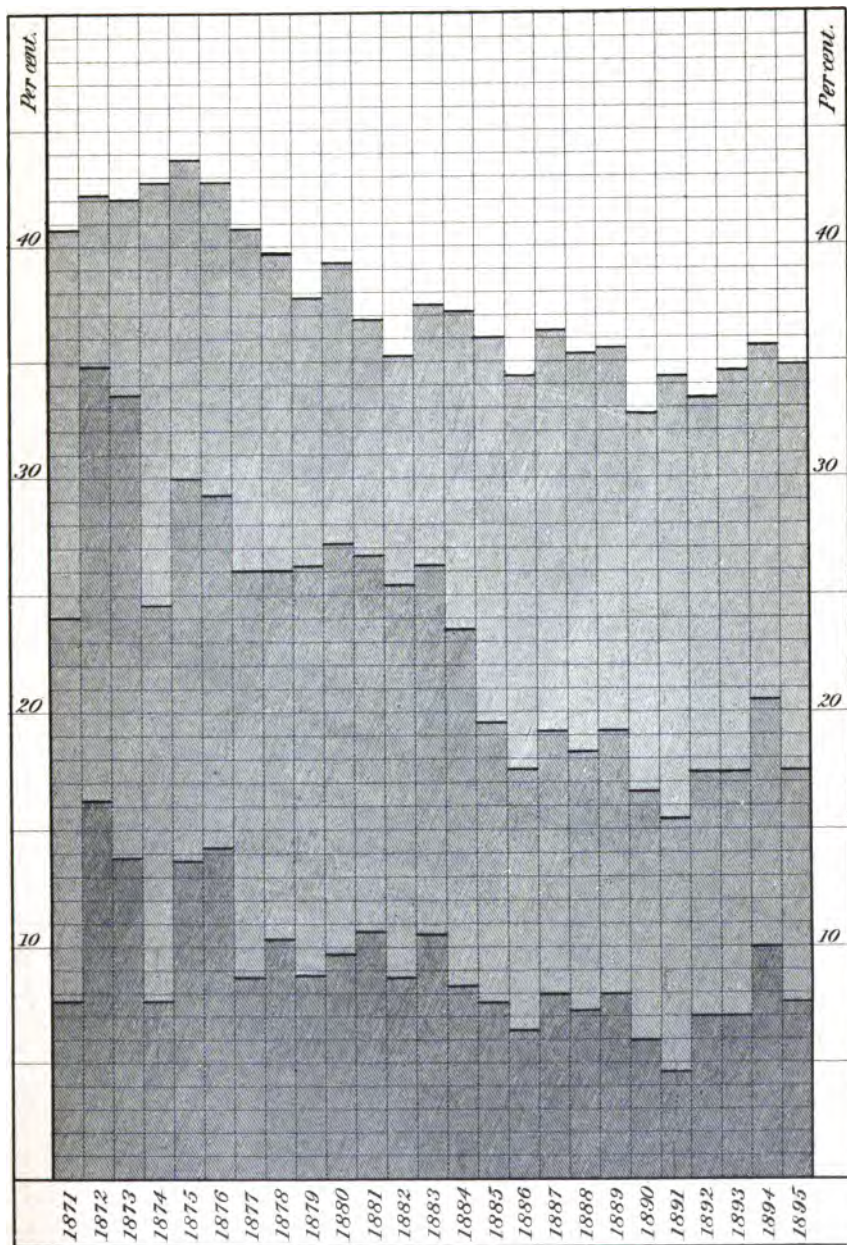


■ Deaths from Zymotic Diseases.

■ Deaths from other Diseases.

CHART NO. 1

Percentage of deaths of Children under five years of age,
ZYMOTIC DEATHS, AND FIVE OF THE PRINCIPAL INFECTIOUS DISEASES
to the total mortality for twenty-five years ending 1895.



Percentage of Children under five years of age to total mortality
 " of Zymotic deaths to total mortality
 " of Diphtheria, Scarlet Fever, Measles, Typhoid Fever,
 and Small-Pox to total mortality

Table I.—Total of Deaths, Still-births, and Deaths from Zymotic Diseases, for Twenty-five Years, with Percentages.

YEARS.	Total Deaths, exclusive of Still-births.	Still-births.	Total Zymotic.	Diphtheria and Croup.	Scarlet Fever.	Typhoid Fever.	Cerebro-spinal Meningitis.	Whooping-cough.	Measles.	Diarrheal Diseases.	Small-pox.	Percentage of Zymotic Deaths to Total Mortality.	Rate of Still-births per 1,000 inhabitants.
1871	5,888	548	1,408	128	111	176	3	30	9	758	23	23.91	1.85
1872	8,090	560	2,823	94	258	229	60	52	60	1,006	788	34.89	1.91
1873	7,869	515	2,626	119	474	243	216	83	16	925	302	33.37	1.76
1874	7,812	642	1,899	121	269	202	35	108	41	940	2	24.80	2.19
1875	9,060	541	2,722	631	534	227	41	41	65	989	1	30.02	1.28
1876	8,253	485	2,459	720	458	145	18	59	2	827	2	29.55	1.41
1877	7,316	471	1,890	471	104	156	24	88	2	913	4	25.83	1.37
1878	7,636	441	1,960	569	68	120	19	88	145	816	..	25.91	1.28
1879	7,398	453	1,935	545	149	119	15	112	2	772	..	26.16	1.24
1880	8,531	443	2,321	774	83	154	8	94	49	1,003	1	27.20	1.22
1881	9,016	513	2,423	802	35	207	16	77	108	870	6	26.87	1.29
1882	8,995	518	2,276	575	75	212	24	92	25	951	8	25.30	1.26
1883	9,740	504	2,551	608	211	198	23	31	152	1,023	1	26.19	1.17
1884	9,622	503	2,278	487	209	216	26	181	13	855	1	23.67	1.17
1885	9,618	520	1,879	460	156	152	19	26	84	723	2	19.53	1.80
1886	9,268	543	1,644	423	81	135	14	37	36	705	..	17.73	1.35
1887	10,073	534	1,993	410	195	183	16	82	119	734	..	19.70	1.33
1888	10,197	552	1,841	589	65	170	19	74	27	669	2	18.05	1.33
1889	10,259	598	1,968	683	23	186	21	96	48	710	2	19.18	1.42
1890	10,181	627	1,677	462	42	155	17	89	19	665	..	16.47	1.39
1891	10,571	614	1,615	285	64	154	21	39	21	755	..	15.27	1.33
1892	11,236	633	2,014	481	262	137	12	45	19	693	..	17.92	1.34
1893	11,710	605	2,042	546	248	148	15	40	27	635	..	17.43	1.24
1894	11,520	700	2,357	878	192	141	18	111	8	700	22	20.46	1.39
1895	11,329	607	1,968	654	114	163	15	47	19	627	..	17.37	1.21

Table II.—Total Number of Deaths under Five Years and Five Years and over, for Twenty-five Years, with Percentages to the Total Mortality.

YEARS.	Total Deaths.	Five Years and over.	Under Five Years.	PERCENTAGES.	
				Five Years and over.	Under Five Years.
1871	5,888	3,493	2,395	59.33	40.67
1872	8,090	4,676	3,414	57.79	42.21
1873	7,869	4,580	3,289	58.20	41.80
1874	7,812	4,454	3,358	57.01	42.99
1875	9,060	5,088	3,972	56.16	43.84
1876	8,253	4,722	3,531	57.22	42.78
1877	7,316	4,334	2,982	59.24	40.76
1878	7,636	4,630	3,006	60.63	39.37
1879	7,398	4,598	2,805	62.08	37.92
1880	8,531	5,182	3,349	60.74	39.26
1881	9,016	5,702	3,314	63.24	36.76
1882	8,995	5,844	3,151	64.97	35.03
1883	9,740	6,113	3,627	62.76	37.24
1884	9,622	6,052	3,570	62.90	37.10
1885	9,618	6,152	3,466	63.97	36.03
1886	9,268	6,082	3,186	65.63	34.37
1887	10,073	6,411	3,662	63.65	36.35
1888	10,197	6,598	3,599	64.71	35.29
1889	10,259	6,626	3,633	64.59	35.41
1890	10,181	6,832	3,349	67.11	32.89
1891	10,571	6,963	3,608	65.87	34.13
1892	11,236	7,501	3,735	66.76	33.24
1893	11,710	7,723	3,987	65.96	34.04
1894	11,520	7,412	4,108	64.34	35.66
1895	11,329	7,394	3,935	65.27	34.73

Table III. — Deaths during the Year 1895, by Sex, Condition, Color, Nativity, Parentage, and Season.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Total number of deaths	960	1,028	1,007	900	891	783	918	1,131	978	946	858	929	11,329
<i>Sex :</i>													
Males	481	516	535	469	474	407	462	573	522	463	469	460	5,831
Females	479	512	472	431	417	376	456	558	456	483	389	469	5,498
<i>Condition :</i>													
Married	294	310	327	301	280	249	221	236	214	259	291	294	3,276
Single	515	537	508	466	476	411	588	781	649	561	443	464	6,399
Widows	107	136	132	95	90	75	69	63	74	93	81	115	1,130
Widowers	39	88	85	31	39	39	34	46	34	28	37	47	447
Unknown	5	7	5	7	6	9	6	5	7	5	6	9	77
<i>Color :</i>													
Whites	943	1,003	979	861	864	763	901	1,101	953	917	836	913	11,034
Colored	17	25	28	39	27	20	17	30	25	29	22	16	295
<i>Nativity :</i>													
United States . . .	632	664	611	597	594	495	664	846	699	655	548	543	7,548
Ireland	197	210	226	147	160	144	183	140	153	157	164	215	2,046
England	17	29	29	24	24	26	20	20	27	13	14	19	262
Scotland	6	13	10	8	4	4	8	7	2	8	12	11	93
Germany	19	18	20	14	16	22	2	16	14	17	14	18	190
British Provinces .	51	47	65	60	57	52	49	55	44	54	70	78	682
Italy	7	7	8	13	7	12	11	9	6	10	7	9	106
Russia	5	8	12	6	4	8	5	8	6	6	3	2	73
Other countries . .	22	19	17	18	18	14	14	16	15	16	17	16	202
Unknown	4	13	9	13	7	6	12	14	12	10	9	18	127
<i>Parentage :</i>													
American	217	247	242	217	209	166	195	243	226	222	185	202	2,571
Irish	371	361	356	281	298	266	297	330	330	313	296	330	3,829
English	16	22	26	24	31	24	23	28	25	12	17	23	271
Scotch	10	16	19	11	12	4	12	16	5	9	13	17	143
German	27	27	27	24	24	30	21	32	28	31	29	26	326
British Provinces .	53	52	52	49	39	38	59	76	59	66	57	44	644
Italian	23	26	16	25	21	14	28	32	23	16	14	22	261
Russian	14	19	29	23	20	20	18	40	30	26	19	12	270
Other countries . .	74	66	69	70	60	65	86	103	71	69	60	60	852
Mixed	54	77	66	74	73	69	97	135	88	85	68	80	966
* Unknown	101	117	105	102	104	87	82	97	93	95	100	113	1,196

* This includes deaths where one parent is unknown.

Table IV.—Deaths from Principal Zymotic Diseases.

	Total Deaths from each Cause.	Percentage of each Cause to Total Mortality.	Deaths per 1,000 inhabitants.	Total Deaths per sex.		Total Deaths per Sex under Five Years.		Total Deaths under Five Years.	Percentage of each Cause under Five Years to Total Mortality.
				M.	F.	M.	F.		
Small-pox . . . . .	...	...	...	...	...	...	...	...	...
Measles	19	.167	.087	10	9	9	7	16	.141
Scarlatina	114	1.006	.227	54	60	40	87	77	.679
Diphtheria	588	5.190	1.178	307	281	195	192	387	3.416
Croup	66	.582	.131	36	30	29	26	55	.485
Whooping-cough	47	.414	.093	26	21	26	20	46	.406
Typhoid Fever	163	1.438	.325	100	63	3	3	6	.052
Erysipelas	84	.300	.067	21	13	5	5	10	.088
Puerperal fever	14	.123	.027	...	14	...	...	...	...
Ourbuncle . . . . .	...	...	...	...	...	...	...	...	...
Dysentery	43	.379	.086	25	18	7	2	9	.079
Diarrhœa	69	.609	.137	30	39	21	24	45	1.379
Cholera morbus	15	.132	.029	7	8	5	1	6	.052
Cholera infantum	500	4.413	.997	255	245	255	244	449	4.404
Cerebro-spinal fever	15	.132	.029	7	8	4	7	11	.097
Influenza	69	.609	.137	28	41	5	6	11	.097
Intermittent fever	5	.044	.009	1	4	...	1	1	.008
Rheumatism	21	.185	.041	9	12	1	...	1	.008
Pyæmia	5	.044	.009	3	2	...	...	...	...
Syphilis, congenital	26	.229	.051	16	10	16	10	26	.229
Syphilis, tertiary	8	.070	.015	3	5	...	...	...	...
Purpura	8	.070	.015	4	4	1	2	3	.026
Alcoholism	70	.617	.139	43	27	...	...	...	...
Septicæmia	62	.547	.123	25	37	3	...	3	.026
Typhus fever . . . . .	...	...	...	...	...	...	...	...	...
Tonsillitis	2	.017	.003	1	1	1	1	2	.017
Remittent fever	1	.008	.001	1	...	...	...	...	...

Table V. — Yearly Percentages of Principal Zymotic Deaths from 1879 to 1895, inclusive, to Total Mortality.

	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Small-pox
Measles
Scarlatina
Diphtheria
Croup
Whooping cough
Typhoid fever
Erysipelas
Tracheitis
Puerperal fever
Carbuncle
Dysentery
Diarrhoea
Cholera morbus
Cholera infantum
Cerebro-spinal fever
Intermittent fever
Rheumatism
Pyæmia
Syphilis, congenital
Syphilis, tertiary
Purpura
Alcoholism
Septicæmia
Yellow fever
Tonsillitis

Table VI.—Ten of the Principal Causes of Death, by Sex and Month, with Nativity of Parents.

	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.		Nativity of Parents.										Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	United States.	Ireland.	England.	Scotland.	Germany.	British Prov.	Italy.	Russia.	Other Countries.	Mixed.		Unknown.
Consumption . . .	62	51	68	52	67	58	56	62	61	66	63	59	47	44	51	42	53	59	58	55	58	55	53	56	697	652	169	682	33	15	41	81	20	14	118	64	112	1,349
Pneumonia	82	67	114	105	85	57	93	62	70	36	84	82	25	26	20	19	19	16	42	35	63	35	72	59	719	549	255	469	29	24	26	80	42	37	91	100	183	1,268
Heart disease . .	39	44	44	46	48	45	43	37	40	33	31	32	20	31	28	84	38	20	39	36	38	37	38	29	446	424	234	305	81	19	82	26	8	10	42	36	127	870
Diphtheria	28	27	26	29	17	12	20	17	13	19	29	14	25	15	29	14	24	27	24	27	32	37	40	43	307	281	148	141	12	6	20	46	18	27	49	103	18	588
Violent deaths . .	34	14	17	19	37	10	31	16	36	18	46	16	41	12	55	13	25	7	35	12	35	8	24	19	416	164	108	190	13	12	14	42	15	15	85	37	99	580
Cholera Infantum .	2	2	2	2	2	1	2	1	3	1	5	3	58	69	83	99	77	54	23	14	4	1	...	255	245	108	106	6	2	13	46	22	34	60	94	10	500	
Bronchitis	23	25	30	39	28	31	20	27	19	21	8	7	11	6	7	11	10	9	15	17	14	18	15	263	236	79	192	6	8	16	30	20	12	46	31	14	489	
Marasmus, etc. . .	8	12	8	10	9	9	18	11	6	14	9	11	16	17	43	38	35	33	27	36	12	11	13	9	204	211	114	75	3	2	9	82	11	5	80	63	71	415
Cancer	11	29	9	19	13	23	7	19	8	18	9	28	14	18	9	27	9	18	6	22	17	24	8	26	120	271	118	132	14	9	16	24	8	1	19	6	49	391
Apoplexy	11	26	18	12	83	25	12	12	15	16	11	14	10	15	11	11	8	12	10	18	12	21	15	24	166	206	109	144	11	4	11	11	3	3	12	16	48	372

Table VII.—Ten of the Principal Causes of Death, arranged by Age and Sex.

	Under 1 yr.		1 yr. under 2 yrs.		2 yrs. under 3 yrs.		3 yrs. under 4 yrs.		4 yrs. under 5 yrs.		Total and under 5 yrs.		5 yrs. and under 10 yrs.		10 yrs. and under 20 yrs.		20 yrs. and under 30 yrs.		30 yrs. and under 40 yrs.		40 yrs. and under 50 yrs.		50 yrs. and under 60 yrs.		60 yrs. and under 70 yrs.		70 yrs. and under 80 yrs.		80 yrs. and under 90 yrs.		90 yrs. and under 100 yrs.		Total of all ages.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.		
Consumption.....	14	9	4	7	5	1	1	1	1	25	18	3	2	58	66	213	214	189	182	98	92	66	45	37	16	12	13	1	3	1	..	..	..	..	697	652
Pneumonia.....	129	91	51	52	22	26	18	3	10	5	230	177	8	11	10	16	63	84	96	42	108	61	83	55	64	74	42	58	15	18	3	719	549
Heart disease.....	12	7	1	1	1	1	2	1	1	17	8	6	12	18	34	34	41	48	64	53	79	77	92	82	75	69	23	26	1	3	..	..	..	..	446	424
Diphtheria.....	21	7	52	60	52	51	37	34	33	40	195	192	90	63	16	20	2	2	1	2	..	3	..	1	1	..	..	..	..	..	..	..	..	..	307	281
Violent deaths.....	17	18	4	4	5	3	7	6	10	2	48	33	14	8	29	8	94	26	16	64	25	43	14	27	16	13	10	2	7	1	..	..	..	..	416	164
Cholera Infantum.....	211	195	39	45	3	3	1	1	1	1	225	244	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	255	245
Bronchitis.....	86	81	26	23	9	2	6	4	2	118	121	2	1	2	2	6	7	8	8	14	9	11	15	16	27	15	28	11	13	6	..	..	..	..	203	236
Marasmus, etc.....	172	180	16	14	2	4	1	1	1	191	199	..	1	2	3	1	..	1	..	1	..	1	1	3	3	2	2	3	..	..	..	..	..	..	204	211
Cancer.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	3	6	27	19	49	34	45	32	60	20	51	8	14	1	..	..	..	120	271
Apoplexy.....	5	7	1	1	2	..	..	1	1	7	10	1	1	1	6	6	12	12	28	20	29	36	42	53	30	43	10	19	1	6	..	..	..	..	166	206

[illegible]

Table IX. — Deaths from Principal Zymotic Diseases, arranged by Age and Sex.

	Under 1 yr.		1 yr. 2 yrs.		2 yrs. 3 yrs.		3 yrs. 4 yrs.		4 yrs. 5 yrs.		Total under 5 yrs.		5 yrs. 10 yrs.		10 yrs. 20 yrs.		20 yrs. 30 yrs.		30 yrs. 40 yrs.		40 yrs. 50 yrs.		50 yrs. 60 yrs.		60 yrs. 70 yrs.		70 yrs. 80 yrs.		80 yrs. 90 yrs.		90 yrs. 100 yrs.		Total of all ages.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Small-pox																																			
Measles	3	4	2	3	1	1	9	7	1	2																							10	9	
Scarlatina	5	3	8	7	11	12	10	8	6	7	40	37	12	19	2	3	1																54	60	
Diphtheria	21	7	52	60	52	51	37	34	33	40	195	192	90	63	16	20	2	2	1	2	3	1	1									307	231		
Croup	5	3	7	9	6	8	3	5	8	1	29	26	7	4																			36	30	
Whooping-cough	18	12	8	6	1	1	1	1	1	1	26	20	1																				26	21	
Typhoid fever	1	1	1	1	1	1	1	1	1	1	3	3	5	3	9	14	39	22	25	9	11	6	3	1	1	1	1	1	1	1	1	100	63		
Erysipelas	4	5									5	5	1	1	2	2	2	3	1	2	2	1	1	2	4	1							21	13	
Puerperal fever																	7	6	1														14		
Carbuncle																																			
Dysentery	6	1	2	1							7	2		1	1	1	3	1	3	5	3	3	4	1	3	2	3						25	18	
Diarrhoea	18	20	3	2	2						21	24			1		1		1	2	3	5	6	3	1	2						30	39		
Cholera morbus	4	1	1								5	1			1	2	2	1					1	1									7	8	
Cholera infantum	211	195	39	45	3	3	1	1	1	1	255	244	1																				255	245	
Cerebro-spinal fever	2	3	3	1	1	1	1	1	1	1	4	7	2		1	1																	7	8	
Remittent fever																																		1	

[illegible]

Table X.—The Number and Percentages of Deaths in each Quarter of each Year during a Period of Thirty-one Years,
1865-95, inclusive.

YEARS.	FIRST QUARTER.		SECOND QUARTER.		THIRD QUARTER.		FOURTH QUARTER.		Rate per 1,000 Inhabitants.
	Deaths.	Per cent.	Deaths.	Per cent.	Deaths.	Per cent.	Deaths.	Per cent.	
1865.....	1,115	24.55	1,068	23.52	1,353	29.89	1,005	22.13	23.5
1866.....	999	22.81	267	21.85	1,338	30.56	1,085	24.78	22.4
1867.....	1,071	24.22	950	21.49	1,191	26.94	1,209	27.35	22.3
1868.....	1,341	24.30	1,203	21.80	1,736	31.45	1,239	22.45	23.9
1869.....	1,374	24.88	1,297	23.48	1,562	28.28	1,290	23.36	23.4
1870.....	1,395	22.88	1,314	21.55	1,983	32.52	1,406	23.05	24.3
1871.....	1,411	23.97	1,299	22.06	1,842	31.28	1,336	22.69	23.0
1872.....	1,697	20.97	1,777	21.97	2,511	31.04	2,105	26.02	31.80
1873.....	2,115	26.88	1,726	21.93	2,278	23.95	1,750	22.24	30.27
1874.....	1,805	23.11	1,818	23.27	2,278	29.16	1,911	24.46	24.9
1875.....	2,190	24.17	2,011	22.20	2,680	29.58	2,179	24.05	24.95
1876.....	2,246	27.21	1,809	21.92	2,376	23.78	1,923	22.09	23.39
1877.....	1,723	23.55	1,613	22.05	2,317	31.67	1,663	22.73	20.15
1878.....	1,743	22.82	1,744	22.84	2,174	23.47	1,975	25.87	21.03
1879.....	1,947	26.32	1,615	21.83	1,959	26.48	1,877	25.37	20.38

1890.	2,015	28.62	1,829	21.45	2,500	29.30	2,187	25.63	23.53
1891.	2,332	25.86	2,021	22.41	2,466	27.34	2,197	24.38	22.67
1892.	2,104	23.39	2,212	24.59	2,489	27.67	2,190	24.35	21.91
1893.	2,268	23.38	2,409	24.74	2,757	28.31	2,808	23.67	22.76
1894.	2,284	23.73	2,103	21.85	2,725	28.33	2,510	26.09	22.48
1895.	2,510	26.10	2,464	23.82	2,592	26.95	2,032	21.13	24.04
1896.	2,214	23.99	2,118	22.79	2,580	27.84	2,361	25.48	23.17
1897.	2,362	23.45	2,231	22.65	2,912	28.90	2,518	25.00	25.18
1898.	2,790	27.36	2,420	23.73	2,649	26.98	2,338	22.93	24.57
1899.	2,437	23.75	2,543	24.79	2,854	27.82	2,425	23.64	24.42
1900.	2,911	28.60	2,244	22.04	2,699	26.51	2,327	22.85	22.70
1901.	2,442	23.10	2,540	24.03	2,835	26.82	2,754	26.05	23.02
1902.	2,998	26.08	2,682	22.98	2,956	26.33	2,698	24.01	23.92
1903.	2,969	25.35	2,847	24.31	3,013	25.74	2,881	24.60	24.02
1904.	2,972	25.80	2,592	22.50	3,182	27.62	2,774	24.08	22.98
1905.	2,995	26.44	2,574	22.72	3,027	26.72	2,733	24.12	22.60

Table XI. — Deaths from Ten of the Principal Causes.

	Total deaths from each Cause.	Percentage of each Cause to Total Mortality.	Death per 1,000 inhabitants.	Total Deaths by Sex.		Total Deaths by Sex under Five Years.		Total Deaths under Five Years.	Percentage of each Cause under Five Years to Total Mortality.
				M.	F.	M.	F.		
Consumption	1,349	11.907	2.692	697	652	25	18	43	.379
Pneumonia	1,268	11.192	2.530	719	549	230	177	407	3.592
Heart disease	870	7.679	1.936	446	424	17	8	25	2.206
Diphtheria	588	5.190	1.173	307	281	195	192	387	3.416
Violent deaths	580	5.119	1.157	416	164	43	33	76	.670
Cholera infantum	500	4.413	.997	255	245	255	244	499	4.404
Bronchitis	439	3.875	.876	203	236	118	121	239	2.109
Marasmus, etc.	415	3.663	.828	204	211	191	199	390	3.442
Cancer	391	3.451	.780	120	271	...	...	...	...
Apoplexy	372	3.283	.742	166	206	7	10	17	.150

Table XII. — Total Deaths each quarter of the last Five Years, with the Aggregate and Average Number from 1886 to 1890, inclusive.

	1891.	1892.	1893.	1894.	1895.	5 years, 1886-1890.	
						Aggregate.	Average.
First quarter	2,442	2,998	2,969	2,972	2,995	12,714	2,543
Second quarter . . .	2,540	2,582	2,847	2,592	2,574	11,601	2,320
Third quarter	2,835	2,968	3,013	3,182	3,027	13,694	2,739
Fourth quarter . . .	2,754	2,608	2,881	2,774	2,733	11,969	2,394
Total for each year .	10,571	11,236	11,710	11,520	11,329	49,978	9,996

Table XIII. — Total Deaths and Percentages each Quarter for the Year 1895, with Aggregates and Percentages for the Ten Years previous.

	1895.		1886-1894.	
	Deaths.	Per cent.	Deaths.	Per cent.
First quarter	2,995	26.44	26,605	25.43
Second quarter	2,574	22.73	24,646	23.55
Third quarter	3,027	26.72	28,274	27.62
Fourth quarter	2,733	24.12	25,108	24.00
Total	11,329	100.00	104,633	100.00

Table XIV. — Parentage of Children under One, Two, and Five Years for each Month during Year 1895.

	JANUARY.			FEBRUARY.			MARCH.			APRIL.			MAY.			JUNE.		
	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.
United States	36	16	24	46	9	12	49	15	17	32	14	15	34	18	10	23	9	8
Foreign	90	43	38	95	30	38	78	31	31	90	28	25	90	27	29	66	22	29
Mixed	26	5	3	26	7	13	25	10	6	20	12	14	28	7	7	21	8	11
One parent known	21	1	1	15	1	4	12	2	1	19	...	1	19	2	...	10	1	3
Unknown	1	1	2	3	...	3	3	...	...	6	1	...	3	...	...	...	...	...
Total	174	66	63	185	47	70	167	58	55	167	55	55	173	54	46	120	40	61

	JULY.			AUGUST.			SEPTEMBER.			OCTOBER.			NOVEMBER.			DECEMBER.		
	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.
United States	64	15	16	103	13	10	93	14	9	64	9	8	31	14	7	35	12	18
Foreign	147	33	26	214	50	26	155	61	28	120	44	30	71	21	36	50	24	42
Mixed	60	9	12	99	8	6	47	8	7	35	10	6	23	6	10	19	9	14
One parent known	17	2	1	32	3	3	25	2	...	24	...	1	19	...	...	22	1	1
Unknown	2	1	1	8	...	...	5	...	1	3	...	1	3	...	...	4	...	1
Total	290	60	56	456	74	45	325	85	45	246	63	46	147	41	53	130	46	76

Table XV.—Cases Reported, and Deaths from Small-pox, Diphtheria, Scarlet Fever, and Typhoid Fever, with Percentages.

DATE.	SMALL-POX. ¹		Percentages.	DIPHTHERIA.		Percentages.	SCARLET FEVER.		Percentages.	TYPHOID FEVER.		Percentages.
	Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.	
1882	2,592	738	28.4	..	..	..	..	..	..	..	..	..
1883	1,103	302	27.3	..	..	..	..	..	..	..	..	..
1884	7	2	28.5	..	..	..	..	..	..	..	..	..
1885	6	1	20.0	..	..	..	..	..	..	..	..	..
1886	6	2	..	..	..	..	..	..	..	..	..	..
1887	17	4	23.5	..	..	..	1,334	104	7.7	..	..	..
1888	..	..	..	1,370	443	32.7	848	68	8.0	..	..	..
1889	..	..	..	1,167	391	33.5	951	149	16.6	..	..	..
1890	4	1	25.0	1,715	538	34.3	497	93	6.6	Oct. 1 to Dec. 31.	Oct. 1 to Dec. 31.	..
1891	..	..	..	1,680	601	35.7	383	95	9.1	335	76	96.8
1892	44	6	13.6	1,396	458	33.0	689	75	10.8	808	212	26.2
1893	24	8	33.3	1,415	444	31.4	1,408	211	14.9	887	198	22.3
1894	8	1	12.4	1,212	345	28.46	2,626	309	8.2	943	216	22.6
1895	11	1	9.0	1,293	334	26.44	1,665	166	9.2	767	192	19.8
1896	1	..	..	1,188	329	27.69	1,149	81	7.0	814	135	16.5
1897	4	..	..	1,049	316	30.12	1,549	195	12.68	940	183	19.46
1898	6	1	12.4	1,411	470	33.30	707	65	9.19	924	170	18.39
1899	10	2	20.0	1,814	564	31.09	464	23	4.98	1,071	186	17.37
1890	1	..	..	1,475	401	27.18	924	42	4.54	847	155	18.29
1891	..	..	..	831	232	27.91	1,327	64	4.82	966	154	15.94
1892	..	..	..	1,353	414	30.59	2,938	202	6.81	765	137	17.90
1893	26	4	15.3	1,466	476	32.49	2,580	248	9.61	824	148	17.96
1894	77	23	29.5	3,019	817	27.06	2,230	192	8.60	915	141	15.41
1895	..	..	..	4,069	568	14.46	1,612	114	7.07	1,023	163	16.83

¹ Exclusive of quarantine.

Table XVII.¹—Diseases arranged Alphabetically.

Abortion (criminal)	6
Abscess, unclassified	14
“ of brain	4
“ of liver	4
“ of pelvis	3
“ of thigh	1
Accidents, unclassified	99
“ burns and scalds	50
“ drowned	50
“ elevator	10
“ fall	47
“ fracture of leg	3
“ “ of neck	3
“ “ of thigh	17
“ “ of skull	35
“ “ of spine	7
“ poisoning	13
“ “ by illuminating gas (suicides included)	28
“ railroad	69
“ suffocation	13
Alcoholism	70
Anæmia	14
“ pernicious	16
Aneurism, not located	4
“ aorta	4
Angina pectoris	19
Anus, imperforate	2
Appendicitis	55
Apoplexy	372
Asthenia	10
Asthma	8
Atelectasis pulmonum	16
Asphyxia of new-born	13
Brain, disease of (unclassified)	2
“ abscess of	4
“ congestion of	10

¹ This table does not include the total number of deaths.

Brain, embolism of	16
“ inflammation of	6
“ softening of	14
“ tumor of	15
Bronchitis (unclassified)	245
“ acute	46
Bronchitis capillary	81
“ chronic	67
Cancer (unclassified)	85
“ of abdomen	4
“ of bladder	4
“ of bowels	28
“ of breast	38
“ of face	10
“ of kidney	3
“ of liver	36
“ of lung	5
“ of neck	3
“ of œsophagus	2
“ of ovaries	2
“ of rectum	19
“ of stomach	82
“ of throat	5
“ of tongue	5
“ of uterus	60
Cholera infantum	500
“ morbus	15
Cellulitis	8
Cirrhosis (of kidney)	2
Cirrhosis of liver	38
Convulsions	33
Croup	66
Cystitis	21
Cyanosis	12
Debility	27
Diabetes	24
“ mellitus	11
Diarrhœa.	69
Diphtheria	588
Dysentery	43

Embolism (unclassified)	16
" of brain	3
" of heart	1
" of lungs	2
Emphysema	10
Empyema	64
Enteritis	62
Entero-colitis	16
Epilepsy	34
Erysipelas	14
Fever, puerperal	114
" scarlet	163
" typhoid	12
Gangrene	192
Gastro-enteritis	1
Glanders	1
Goitre (exophthalmic)	557
Heart disease (unclassified)	16
" dilatation of	3
" embolism of	39
" endocarditis	18
" fatty degeneration of	3
" hypertrophy of	7
" malformation of	11
" pericarditis	216
" valvular	12
Hernia, strangulated	200
Hydrocephalus and tubercular meningitis	22
Homicide	95
Inanition	23
Insanity	6
Jaundice	8
Kidney diseases (unclassified)	143
" Bright's disease of	3
" cancer of	2
" cirrhosis	221
" inflammation of	5
Laryngitis	5
Leucocythæmia	20
Liver diseases (unclassified)	

Fever, abscess of	4
“ cancer of	36
“ cirrhosis of	38
“ inflammation of	13
Locomotor ataxia	9
Lung diseases (unclassified)	4
“ congestion of	19
“ œdema of	3
“ consumption of	1,349
“ embolism of	1
“ inflammation of	1,268
Malformation of heart	7
Measles	19
Meningitis	282
“ cerebro-spinal	15
Obstruction of bowels	43
Old age	252
Ovarian cancer	2
“ tumor	4
Paralysis	75
Prostate gland (disease of)	10
Peritonitis	110
Pleurisy	15
Pneumonia (unclassified)	1,112
“ broncho	142
“ pleuro	14
Poisoning (accidental)	13
Premature birth	183
Puerperal diseases, not including puerperal fever	37
Pyæmia	5
Rheumatism	21
Scrofula	7
Septicæmia	62
Sarcoma	24
Spinal disease (unclassified)	2
“ “ Pott's	1
“ inflammation	11
Spina bifida	8
Stomach, inflammation of	51
“ ulceration of	12

Suffocation (accidental)	13
Suicide	77
Surgical operation (death following)	30
Syphilis	8
" congenital	26
Tabes-mesenterica, and marasmus	408
Teething	14
Tetanus	5
Tonsillitis	2
Tuberculosis	162
Tumor (unclassified)	8
" of abdomen	8
" of brain	15
" of ovary	4
" of uterus	6
Uterine disease, cancer	60
" " tumor	6
Umbilical hæmorrhage	7
Uræmia	24
Whooping-cough	47

COMPARATIVE DEATHS IN AMERICAN AND FOREIGN CITIES.

The following tables have been prepared to show the comparison of deaths of a few large American and foreign cities, as compared with the city of Boston. It is to be regretted that the amount of information desired is not fully complete, owing to the scarcity of material and information furnished, but in their present condition, as a matter of reference, they may be of value.

Boston.

YEARS.	Population.	Total Deaths.	Population of Children under 5 years of age.	Deaths of Children under 5 years of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	362,635	8,531	37,138	3,349	568	83	154	49
1881	367,628	9,016	37,424	3,314	601	85	207	108
1882	410,376	8,995	37,710	3,151	458	75	212	25
1883	427,940	9,740	37,996	3,627	445	211	198	152
1884	427,940	9,622	38,282	3,570	345	209	216	13
1885	400,000	9,618	38,569	3,466	334	156	152	84
1886	400,000	9,268	39,855	3,186	329	81	135	36
1887	400,000	10,073	39,141	3,662	316	195	183	119
1888	415,000	10,197	39,428	3,509	470	65	170	27
1889	420,000	10,259	39,714	3,633	564	23	186	48
1890	448,477	10,181	40,001	3,349	401	42	155	19
1891	459,062	10,571	40,287	3,608	232	64	154	21
1892	469,647	11,236	40,573	3,735	414	262	137	19
1893	487,397	11,710	40,859	3,987	476	248	148	27
1894	501,107	11,520	41,145	4,108	817	192	141	8
1895	501,083	11,329	41,481	3,935	588	114	163	19

Philadelphia, Pa.

YEARS.	Population.	Total Deaths.	Population of Children under 5 years of age. ¹	Deaths of Children under 5 years of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880 ¹	846,980	17,711	¹ 91,544	6,594	323	291	498	108
1881	868,000	19,515	² 92,744	7,124	457	486	645	17
1882	886,539	20,069	94,004	7,254	933	310	650	91
1883	907,041	20,076	95,234	7,417	1,006	561	579	58
1884	927,995	19,999	96,465	7,606	680	540	662	96
1885	949,432	21,392	97,695	8,188	600	375	610	131
1886	971,368	20,005	98,925	7,351	411	248	618	19
1887	993,801	21,719	100,155	8,421	416	159	621	358
1888	1,016,758	20,372	101,386	7,269	350	235	785	24
1889	1,040,245	20,536	102,616	7,752	375	298	736	92
1890 ¹	1,046,964	21,732	¹ 103,847	7,913	528	189	666	105
1891	1,069,264	23,367	105,077	8,479	918	341	684	25
1892	1,092,168	24,305	. . . . .	9,305	1,425	484	539	74
1893	1,115,562	23,655	. . . . .	8,690	392	267	456	88
1894	1,139,457	22,680	. . . . .	8,160	1,047	154	369	33
1895	1,163,864	23,797	. . . . .	8,401	1,020	79	460	84

¹ Census years.² Estimated on the increase of census years.

New York, N.Y.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age. ¹	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880 ¹	1,209,268	81,937	140,673	14,650	1,390	618	372	479
1881	1,246,011	88,624	144,947	17,787	2,249	1,964	594	429
1882	1,283,870	97,924	149,351	17,520	1,525	2,066	516	918
1883	1,322,880	94,011	153,889	18,856	1,009	744	625	716
1884	1,363,075	95,044	158,565	15,272	1,090	608	476	762
1885	1,404,401	95,682	163,383	15,267	1,325	559	405	736
1886	1,447,166	97,351	168,347	16,121	1,727	371	433	668
1887	1,491,137	98,933	173,462	16,766	2,167	569	421	767
1888	1,536,444	101,175	178,733	17,358	1,914	1,361	364	591
1889	1,583,120	99,679	184,164	17,152	1,686	1,242	397	470
1890	1,631,232	101,103	189,760	16,305	1,262	408	352	730
1891	1,680,796	103,659	195,525	18,224	1,361	1,220	384	663
1892	1,827,396	111,317	210,523	18,589	1,425	975	399	863
1893	1,891,306	114,479	210,523	17,914	1,968	552	381	390
1894	1,967,452	117,175	210,523	17,596	2,359	541	326	584
1895	1,879,195	114,420	210,523	18,221	1,634	468	322	798

¹ The population is estimated by taking the preliminary figures of the census of 1890 as a basis, and from that and the census of 1880 calculating the intervening numbers. We have no figures for ages since 1880, so that the number under five are estimated to be in the same ratio to the entire population as in 1880.

Chicago, Ill.

YEARS.	Population, Estimated.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	503,298	10,462						
1881	540,000	13,874						
1882	560,639	13,234		6,645				
1883	580,000	11,555		5,875				
1884	630,000	12,471		6,666				
1885	665,000	12,474		6,187	706	279	496	78
1886	704,000	13,699		6,763	944	220	483	126
1887	760,000	15,409		7,568	1,002	190	381	341
1888	830,000	15,772		7,533	858	184	376	151
1889	1,106,000	16,946		8,204	1,126	185	453	204
1890	1,200,000	21,869		9,954	881	193	1,008	67
1891	1,250,000	27,754		12,801	958	499	1,997	256
1892	1,438,000	26,219		11,662	1,014	382	1,489	185
1893	1,600,000	27,095		12,364	975	329	670	234
1894	1,567,727	23,701		12,363	841	190	491	182
1895	1,600,000	24,319	227,260	10,449	1,776	77	518	158

Brooklyn.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.	Deaths from Consump- tion.
1885	687,000	15,369	89,310	6,766	519	363	153	175	1,995
1886	747,000	15,790	97,110	7,000	782	340	123	106	2,085
1887	778,000	17,079	101,140	7,577	950	271	143	172	2,026
1888	810,000	18,061	105,300	8,079	984	475	153	59	2,051
1889	842,000	18,480	109,460	8,265	1,101	273	161	205	2,055
1890	875,000	19,827	113,750	8,462	902	227	182	111	2,169
1891	910,000	21,349	118,300	9,388	766	485	180	203	2,117
1892	945,000	20,807	122,350	8,971	775	412	162	168	2,128
1893	990,000	21,917	127,400	8,763	607	307	179	111	2,174
1894	1,045,000	21,183	135,850	9,235	1,279	188	158	204	2,260
1895	1,100,000	22,568	124,000	9,277	1,139	124	173	192	2,299

St. Louis.

YEARS.	Population.	Total Deaths.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlet Fever.	Deaths from Typhoid Fever.	Deaths from Measles.	Deaths from Consumption.
1885	400,000	7,490	3,090	Diph. — Group 372 — 109	164	125	54	868
1886	400,000	8,268	3,434	719 — 160	149	124	6	915
1887	420,000	9,155	3,795	927 — 185	48	116	40	829
1888	440,000	9,015	3,659	564 — 167	30	130	21	800
1889	450,000	8,004	3,149	345 — 94	114	146	63	655
1890	460,000	8,409	3,115	186 — 58	87	140	1	843
1891	480,000	9,530	3,493	250 — 90	96	165	52	869
1892	500,000	10,225	3,607	195 — 91	160	441	7	882
1893	520,000	10,303	3,543	227 — 144	79	215	26	984
1894	540,000	8,710	3,192	240 — 139	29	171	3	875
1895	560,000	9,425	3,373	512 — 171	18	107	28	1,000

London, England.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	3,771,139	81,832	497,044	36,220	544	3,100	702	1,521
1881	3,824,960	81,071	497,044	33,825	654	2,166	977	2,533
1882	3,861,876	82,905	497,044	36,259	863	2,064	975	2,329
1883	3,901,164	80,573	497,044	33,552	951	1,989	965	2,420
1884	3,939,832	83,050	497,044	36,030	973	1,844	936	2,285
1885	3,978,883	80,000	497,044	32,913	896	707	583	2,923
1886	4,018,321	82,276	497,044	34,319	846	688	618	2,973
1887	4,058,150	82,304	497,044	35,236	953	7,419	612	2,904
1888	4,098,374	79,099	497,044	32,669	1,311	1,190	694	2,425
1889	4,138,996	76,026	497,044	30,469	1,616	771	538	2,308
1890	4,180,021	89,554	497,044	36,123	1,417	876	618	3,291
1891	4,221,452	90,216	501,558	33,340	1,361	589	547	1,807
1892	4,263,294	87,749	501,558	34,560	1,885	1,174	436	3,396
1893	4,306,411	91,536	501,558	35,200	3,266	1,506	719	1,661
1894	4,349,166	77,039	501,558	31,366	2,670	962	635	3,293

¹ Estimated.

Paris, France.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age. ¹	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880 . . . . .	.....	55,706	.....	17,674	2,048	345	2,003	962
1881	2,239,938	55,103	148,601	17,159	2,211	440	1,955	897
1882 . . . . .	.....	56,854	.....	17,158	2,244	156	3,214	1,005
1883 . . . . .	.....	54,763	.....	16,843	1,781	88	1,880	1,043
1884 . . . . .	.....	55,059	.....	16,968	1,928	155	1,603	1,501
1885 . . . . .	.....	52,726	.....	15,244	1,655	191	1,320	1,524
1886	2,260,945	55,110	146,177	16,493	1,512	403	954	1,210
1887 . . . . .	.....	52,836	.....	15,206	1,585	224	1,385	1,628
1888 . . . . .	.....	51,230	.....	14,463	1,729	193	756	915
1889 . . . . .	.....	54,083	.....	14,679	1,706	170	1,008	1,190
1890 . . . . .	.....	54,566	150,490	15,068	1,668	223	656	1,495
Census of 12th April, 1891 .	2,424,705							
1891 " .	2,424,705	54,443	150,490	14,048	1,531	208	549	1,020
1892 " .	2,424,705	54,536	150,490	14,353	1,403	198	691	909
1893 " .	2,424,705	52,955	.....	13,046	1,266	177	570	677
1894 " .	2,424,705	² 49,205	150,490	11,901	1,009	151	697	993

¹ Estimated, 1891.² Inhabitants of Paris only.

Berlin, Germany.

YEARS.	Population.	Total Deaths. ¹	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age. ²	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
Beginning . .	1,089,070	.....	142,476					
1880		82,823	.....	19,249	1,198	872	527	376
End	1,123,749	.....	183,060					
1881		31,055	.....	17,493	1,593	903	352	201
End	1,158,559	.....	143,828					
1882		80,465	.....	16,990	1,914	604	357	144
End	1,196,205	.....	146,138					
1883		35,056	.....	19,902	2,651	867	222	1,173
End	1,232,716	.....	144,464					
1884		32,932	.....	18,440	2,446	395	243	295
End	1,271,677	.....	144,620					
1885		31,483	.....	15,558	1,816	409	214	406
End	1,315,656	.....	146,227					
1886		34,293	.....	19,215	1,585	271	181	565
End	1,363,081	.....					
1887		30,336	.....	15,777	1,305	257	193	223
End	1,415,269	.....					
1888		29,295	.....	15,076	1,018	201	188	364
End	1,472,151	.....					
1889		34,460	.....	18,394	1,189	244	290	201
End	1,528,721	.....					
1890		33,393	.....	17,630	1,492	298	143	441
End	¹ 1,579,524	.....	² 164,370					
1891	1,601,327	.....	.....	16,800	1,010	150	166	130
1892	1,656,715	32,606	172,378	16,319	1,325	53	137	217
1893	1,714,938	36,082	.....	.....	1,578	582	161	341
1894	1,655,235	30,961	176,200	14,649	1,361	443	69	203

¹ Census of December 1, 1890.² Excluded: Still-born, 1,749, 1,771, 1,759, 1,707, 1,778, 1,848, 1,710, 1,761, 1,756, 1,789, 1,473.

Vienna, Austria.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria and Croup.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	721,016	20,453	58,023	8,219	597	172	171	98
1881	731,208	21,549	. . . . .	8,224	539	236	171	106
1882	740,919	21,595	. . . . .	8,903	522	410	187	203
1883	750,762	21,194	. . . . .	7,930	360	150	157	246
1884	759,849	20,353	. . . . .	7,688	342	130	95	344
1885	769,839	21,976	. . . . .	8,668	464	83	106	289
1886	780,066	20,869	. . . . .	8,114	546	124	85	338
1887	790,381	20,549	. . . . .	7,912	455	391	80	493
1888	800,836	20,349	. . . . .	7,547	521	230	107	253
1889	811,434	20,106	. . . . .	7,624	513	139	103	364
1890	822,176	20,324	69,710	7,853	536	92	77	459
1891	1,378,530	34,479	130,808	15,610	1,311	271	85	855
1892	1,406,933	35,134	. . . . .	16,843	1,580	242	116	825
1893	1,435,931	34,515	¹ 130,808	15,002	1,615	311	105	1,225
1894	1,465,637	33,944	140,545	15,073	1,679	413	74	898

¹ Enumerated 1890.

Glasgow, Scotland.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880 . . . . .	.....	13,308	.....	6,071	150	463	278	331
1881 Census	511,415	12,909	69,931	5,386	162	256	166	333
1882 . . . . .	.....	12,985	.....	5,972	177	263	162	213
1883 . . . . .	.....	14,476	.....	6,494	132	449	167	605
1884 . . . . .	.....	13,839	.....	6,174	157	412	184	335
1885 . . . . .	.....	13,444	.....	6,156	112	238	102	430
1886 . . . . .	.....	13,053	.....	5,601	111	345	81	90
1887 . . . . .	.....	12,055	.....	5,367	174	234	100	302
1888 . . . . .	.....	11,533	.....	4,743	168	163	59	205
1889 . . . . .	.....	12,590	.....	5,970	167	109	111	594
1890 . . . . .	.....	13,222	.....	5,768	139	124	106	583
1891 Census	565,710	14,149	72,481	5,432	131	201	123	400
1892	669,059	15,128	84,860	6,306	162	304	102	781
1893	677,883	15,798	85,968	6,953	208	263	120	855
1894	686,820	13,674	87,103	5,326	245	204	150	250

Liverpool, England.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1884	541,031	14,382	.....	6,908	80	197	112	611
1885	537,548	13,764	.....	6,213	133	190	95	716
1886	534,088	13,919	.....	6,152	125	277	140	273
1887	530,649	14,006	.....	6,218	95	321	130	661
1888	527,233	12,159	.....	5,070	66	187	125	331
1889	523,838	13,047	.....	5,921	57	352	167	485
1890	520,466	14,293	.....	6,319	104	577	99	535
1891	517,145	13,911	.....	5,697	63	119	92	320
1892	513,818	12,671	.....	5,322	47	131	111	456
1893	510,514	13,919	.....	6,035	47	231	221	273
1894	507,230	12,073	64,544	5,214	65	232	248	299

CONTAGIOUS DISEASES.

The number of cases of contagious diseases reported to the Board of Health for the year 1895 was 9,430, against 7,854 in 1894. The number of deaths from the same diseases in 1895 was 884, against 1,180 in 1894. There were reported 4,059 cases and 588 deaths from diphtheria; 1,612 cases and 114 deaths from scarlet fever; 2,733 cases and 19 deaths from measles; 1,026 cases and 163 deaths from typhoid fever.

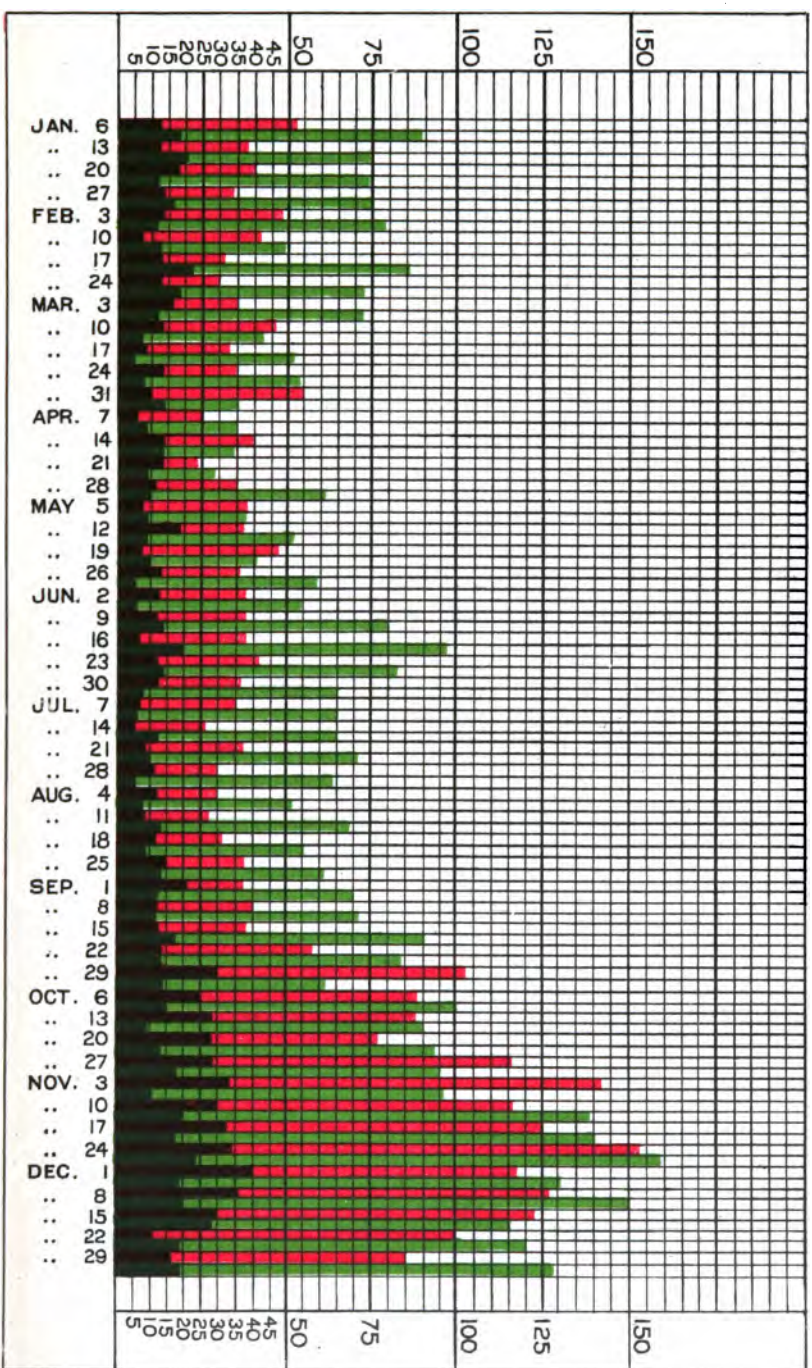
Scarlet fever has presented the mildest type of the disease seen for many years. Measles and typhoid fever have presented no unusual features, and small-pox has not been found during the year. One case of leprosy was found in the city and removed to Gallop's Island Hospital in August.

DIPHTHERIA.

The Board of Health first called for reports of cases of diphtheria in 1878, and the foregoing table shows the reported cases and deaths and the percentage of reported deaths to the reported cases. The average annual number of cases reported is 1,602, and the average annual number of deaths 456. It will be noticed that for the seventeen years (1878 to 1894 inclusive) the annual number of cases of diphtheria and the mortality from this disease have been uniformly large. The annual percentage of deaths to the reported cases have ranged from 27.06 to 35.7, with an annual average of 30.74.

In our last annual report we predicted a decrease of diphtheria for the year 1895 by reason of our prospective increased facilities for dealing with this disease. The use of antitoxine and the diligent watchfulness of our medical agents throughout the year have been potent factors, as we predicted they would be, in lowering the mortality of the disease and in preventing its spread. The new and adequate hospital for contagious diseases was not opened for use until more than half of the year had passed, so that the full benefits of needful isolation in hospital was not realized, although its use during the last few months of the year has been fully appreciated.

Cases and Deaths from Diphtheria each week during the year 1895, compared with the corresponding weeks in 1894.



BACTERIOLOGY.

The bacteriological work in culture diagnosis of diphtheria, begun by the Board of Health in October, 1894, has been continued at the Harvard Medical School Laboratory under the charge of Professor Harold C. Ernst. The work has increased greatly in amount and in its importance in the control of diphtheria. Cost of plant was about \$1,000; average monthly expense for maintenance, \$212.50

ANTITOXINE.

The preparatory work for the production of antitoxine for diphtheria began in November, 1894, and detailed in our last annual report, was completed in July, 1895, when the first serum was obtained from the immunized horses. We have now six horses in excellent condition which can supply about 400 doses or 4,000 cubic centimeters a month. The cost of the plant at Gallop's Island, for this purpose, has been \$2,704.59.

The cost of preparations at the laboratory of the Harvard Medical School for same plant has been \$1,762.75.

Total expenses of the plant, \$4,467.34.

The cost of maintenance has averaged \$288.49 per month.

The City Hospital, Children's Hospital, and the Boston Dispensary have been fully supplied with this serum. The surplus has been delivered free of expense to physicians, who make detailed returns of the cases to which they apply the serum. The question of the extent and method of supplying this remedy by the Board of Health being clearly one for the City Council to settle, the following communication was sent to the City Council on November 14, 1895:

To the Honorable City Council, City of Boston:

GENTLEMEN: The Board of Health respectfully represents that its plant for the production of antitoxine is now producing about 3,000 cubic centimeters of the antitoxine per month, and is able to meet the demands of the City Hospital, the City Dispensary, the Children's Hospital, and has a moderate surplus on hand which might be disposed of otherwise. The Board respectfully requests that the City Council establish, by ordinance or otherwise, the extent to which it may

produce and furnish antitoxine to the departments and citizens of Boston, with such conditions as may seem proper.

Very respectfully,

THE BOARD OF HEALTH,

S. H. DURGIN,

Chairman.

The question will, undoubtedly, be settled in the ordinances of the city which are now undergoing revision.

MEDICAL INSPECTION OF SCHOOLS AND SUPERVISION OF CONTAGIOUS DISEASES.

The inspection of schools, which was commenced in November, 1894, and described fully in our last annual report, has been followed through the year with excellent results. The schools have been visited daily, and all children who have complained of illness or appeared to the teachers to be ill have been examined by the visiting physician who, in all cases, advises the teachers what to do with the pupil. This work has now been in progress for fourteen months, and it has demonstrated the fact that there are not only many cases of contagious diseases to be found in the schools, and which require early recognition and removal, but that there are large numbers of school children whose illness and whose disposition by the teacher requires the decision of a competent physician. The work has disarmed all opposition, and, so far as we know, has the approval of the school government and the community at large, and has fully met the expectations of the Board of Health. We hope to still further develop the usefulness of this work during the coming year.

For the fourteen months ending December 31, 1895, 16,790 pupils were examined, 10,737 of whom were found to be ill; 6,053 were found not to be ill, and 2,041 of these were too ill to remain in school for the day.

Seventy-seven cases of diphtheria; 28 cases of scarlet fever; 116 of measles; 28 of chicken-pox; 69 of pediculosis, 47 of scabies; 47 of mumps; 33 of whooping-cough, and 8 of congenital syphilis were found in children sitting

in their seats spreading these diseases to other children. The remaining 10,372 sick children were suffering from a large variety of other diseases.

The same corps of physicians act as agents of the Board of Health, and see all cases of diphtheria and scarlet fever which are treated at their homes. They report to the Board of Health whether or not the cases are properly isolated, and otherwise furnish the Board of Health with trustworthy information for its action concerning the isolation and discharge of cases of diphtheria and scarlet fever.

For the information of physicians the following circular was issued in January :

CITY OF BOSTON.

HEALTH DEPARTMENT,
OLD COURT HOUSE, January 1, 1896.

To the Physicians of Boston :

GENTLEMEN: The Board of Health respectfully calls your attention to the enclosed regulation and cards which have been prepared, and are being used, with other means, to check the spread of contagious diseases.

The Board of Health has the authority and is charged with the duty, under the statute law, of taking official charge of any case of contagious or infectious disease which may be dangerous to the public health. It prefers that such cases only as cannot be properly isolated at home be sent to the hospital, and that all others be attended by the family physician at home and nursed and provided for by any safe and proper method which may be chosen by the family. The isolation of such cases at home must be satisfactory to the Board of Health, and be so certified by its authorized medical agent in the district in which the patient is found. Such patient cannot lawfully leave such isolation until released by a written discharge from the Board of Health, — small-pox, diphtheria, membranous croup, and scarlet fever being particularly held in view at this time.

The Board of Health has appointed fifty physicians, who are known as school inspectors and agents of the Board of Health. Their duties are to visit the public schools daily, to examine all sick or complaining pupils, and to advise the teachers concerning them.

They will decide all questions concerning the school attendance of such children as live within the same building, but not of the same household, in which there is a case of contagious disease. Such cases must either be so isolated as not to endanger the health and liberty of other families or must be taken to the hospital.

They also visit every case of diphtheria, membranous croup, and

scarlet fever reported; first, concerning the patient's isolation, and, second, concerning his discharge from isolation, in accordance with the following regulation of the Board of Health:

CITY OF BOSTON.

HEALTH DEPARTMENT, July 1, 1895.

At a meeting of the board of health, this day, the following regulation was adopted:

1. — Whoever is infected with small-pox, scarlet fever, diphtheria, or membranous croup shall immediately proceed to some isolated place or room designated by the board of health, and no person who has been so affected shall leave such place or room, and no article shall be removed from such place or room, until the board of health shall certify in writing that all danger of communicating such disease to others is passed.
2. — Every parent or guardian of any child or ward infected with small-pox, scarlet fever, diphtheria, or membranous croup shall immediately cause such child or ward to be conveyed to some isolated place or room approved by the board of health, and no parent or guardian shall permit such child or ward to remove from such place or room until the board of health shall find and certify in writing that all danger of communicating such disease to others has passed.
3. — No person other than the attending physician, nurse, and agents of the board of health shall enter any apartment or other place set apart for the treatment of small-pox, scarlet fever, diphtheria, or membranous croup until the board of health shall certify in writing that such apartment or place has been satisfactorily disinfected.
4. — No person having the care of any other person who has been affected with small-pox, scarlet fever, diphtheria, or membranous croup shall advise or permit such other person to leave any place designated by the board of health as a place of isolation of such infected person before said board of health shall have certified in writing that such person can leave such designated place without danger to others.
5. — No physician who has been in attendance upon any person who has been infected with small-pox, scarlet fever, diphtheria, or membranous croup shall advise or knowingly permit such person to leave any place designated by the board of health as a place of isolation of such infected person before said board of health shall have certified in writing that such infected person can leave such place without danger to others.

Card No. 1 is to be used by all physicians in complying with the statute law for the immediate report of cases of contagious disease, and reads as follows:

No. 1.

Boston, _____ 189

The Board of Health is hereby notified that _____
 age, _____ years, living at No. _____ Ward _____
 is ill with _____. The first symptoms occurred
 on _____. he attends _____ school.
 [DATE.] _____ M.D.

Is patient going to Hospital? _____

Note.—Physicians are expected, under the law, to report EACH case of diphtheria, membranous croup, scarlet fever, cholera, small-pox, measles, chicken-pox, typhus fever, and typhoid fever to which they may be called.

Note.—In unnumbered streets a favor will be conferred by stating, in addition to the name of the street, the nearest cross street.

Card No. 2 is a warning to the public of a contagious disease in compliance with the statute law, and reads as follows:

No. 2.

NOTICE

*of a case of***DIPHTHERIA.**

When the danger from contagion has passed this card will be removed.

By order,

BOARD OF HEALTH.

Any person removing this card without authority is liable to a fine of One Hundred Dollars.

(Similar cards for other contagious diseases.)

Card No. 3 constitutes a courteous note from the agent of the Board of Health to the attending physician, and reads as follows:

No. 3.

Office of Board of Health,

Boston, _____ 189

Doctor _____

I have just now made an official visit at the house of your patient
 _____ at _____ for the
 Board of Health. It will be my duty to coöperate with you in main-

taining the necessary isolation of the patient, and, on notice from you or the family of the termination of the disease, to see the patient and certify the facts required by the Board of Health for its action.

Respectfully,

Agent, Board of Health.

Address, _____

Card No. 4 gives the approval or disapproval of the isolation by the agent of the Board of Health, and reads as follows:

No. 4.

• Boston, _____ 189

I hereby—approve the place and plan of isolation which is being carried out in the case of _____ suffering with

_____ at _____ Ward _____

Recently attended _____ School.

M.D.,
Agent Board of Health.

Card numbered 5 is used to designate the apartment occupied by the patient and designated by the Board of Health as a place of isolation of the patient, and reads as follows:

No. 5.

SCARLET FEVER.

This door opens to an apartment designated and set apart by the Board of Health, City of Boston, for the isolation of a patient suffering from scarlet fever.

(Similar card used for other diseases)

Card No. 6 is from the attending physician to the agent in the district calling for final inspection (not a necessity in diphtheria), and reads as follows:

No. 6.

Boston, _____ 189

Dr. _____

Agent Board of Health.

Sir:

My patient _____, at No. _____

_____ Street, is ready for the action of
the Board of Health.

Culture reported negative. (date) _____

Desquamation ceased. (date) _____

Attending Physician.

Card No. 7 is a statement of the agent to the Board of Health and is
a warrant for disinfection of apartments and release of patient from
isolation by the Board of Health and reads as follows:

No. 7.

Boston, _____ 189

To the Board of Health:

Gentlemen:

I have this day examined _____
recently ill with _____, at No. _____
_____ Street, Ward _____, and recommend the
disinfection of rooms, removal of card of warning, and release of patient
from isolation, on * _____

Respectfully,

Agent, Board of Health.

* Date. _____

Card No. 8 is issued by the Board of Health and delivered to the
householder by the disinfecting officer when his work has been done,
and reads as follows:

No. 8.

CITY OF BOSTON,
Health Department,
_____ 189

This is to certify that the household situated No. _____ lately
infected with _____ has been disinfected to the satisfaction of
the Board of Health, and that all persons living therein, and all articles con-
tained therein, can be removed without danger of communicating such disease
to others.

THE BOARD OF HEALTH,

Secretary.

Card No. 9 is made necessary by Chap. 198 of the Acts of 1885 (found below), is issued by the School Board, and reads as follows:

No. 9.

N.B. — CANCEL WORDS NOT APPLICABLE.

Boston, _____ 18

I hereby certify that TWO WEEKS have elapsed

since { death, recovery, removal, } in the last case of { Small-Pox, Diphtheria, Scarlet Fever, Measles, } in the house-

hold of _____ residing at No. _____ Street,

Ward _____

_____ M.D.

By isolation the Board of Health means complete and continued separation of the patient from all other persons, except the attending physician and nurse, from the beginning of the illness until disinfection has been done and the written release from the Board of Health delivered to the patient or those having the patient in charge. In all cases of doubt the patient should be placed in isolation until such time as the attending physician, using all available means, may ascertain the evidence of contagion or infection, and then be immediately reported to the Board of Health. In cases of diphtheria and membranous croup there must be at least one negative culture reported by the bacteriologist, and in cases of scarlet fever all desquamation from the fever must have ceased and this fact reported by the district agent before disinfection will be done or the discharge of the patient be authorized by the Board of Health. The reason and necessity for this will be apparent to all physicians.

All possible haste will be used by the Board of Health to disinfect rooms, etc., and release patient, on receipt of the prescribed statement from its medical agent, whose address will be found on card No. 3. The agent of the Board of Health will not, in any way, encroach upon the duties or rights of the family physician, in the performance of his duties, while examining into the isolation of the patient, his visit preliminary to the discharge of the patient from isolation, or his medical inspection of schools; and we bespeak and anticipate a continuance of the pleasant relations which now exist between our agents and the medical profession throughout the city.

THE BOARD OF HEALTH,

S. H. DURGIN, M.D.,

Chairman.

List of names of School Inspectors and Agents, Board of Health:

- DR. H. D. ARNOLD, 188 Warren street, Roxbury.
" S. H. AYER, 318 Shawmut avenue.
" W. B. BANCROFT, 597 Broadway, South Boston.
" W. S. BEAUMONT, 23 Alveston street, Jamaica Plain.
" W. S. BOARDMAN, 7 Bowdoin square.
" J. P. BROIDRICK, 67 South street, Jamaica Plain.
" JOHN S. BROWN RIGG, 16 Delle avenue, Roxbury.
" A. B. COFFIN, 506 Washington street, Dorchester.
" R. M. COLE, 456 Broadway, South Boston.
" D. A. COLLINS, 11 Parmenter street.
" GEO. A. CRAIGIN, 405 Marlboro' street.
" J. T. CUTLER, 633 Warren street, Roxbury.
" J. R. DRAPER, 512 Broadway, South Boston.
" JOHN DUFF, 5 Dexter row, Charlestown.
" D. G. ELDRIDGE, 15 Monadnock street, Dorchester.
" WM. H. ENSWORTH, 7 Chelsea street, East Boston.
" WM. E. FAY, 571 Tremont street.
" WM. H. GRAINGER, 408 Meridian street, East Boston.
" E. M. GREENE, 49 Hancock street.
" J. S. GREENE, 1107 Washington street, Dorchester.
" E. M. HOLDEN, 203 Huntington avenue.
" F. C. JILLSON, Hastings street, W. Roxbury.
" A. S. KNIGHT, 295 Beacon street.
" H. E. MARION, 5 Sparhawk street, Brighton.
" O. H. MARION, 22 Harvard street, Allston.
" WM. J. McNALLY, 172 Bunker Hill street, Charlestown.
" R. M. MERRICK, 15 Adams street, Dorchester.
" G. P. MORRIS, 599 Broadway, South Boston.
" T. J. MURPHY, 372 Dudley street, Roxbury.
" E. H. NICHOLS, 220 Marlboro' street.
" J. F. O'BRIEN, 401 Bunker Hill street, Charlestown.
" EDW. F. O'SHEA, 40 Chelsea street, East Boston.
" J. C. D. PIGEON, 130 Warren street, Roxbury.
" H. L. PLUMMER, 696 Saratoga street, East Boston.
" W. H. PRESCOTT, 285 Marlboro' street.
" H. S. ROWEN, 237 Market street, Brighton.
" J. H. SHERMAN, 534 Broadway, South Boston.
" H. L. SMITH, 156 Newbury street.
" F. W. STUART, 550 Broadway, South Boston.
" ROBERT SWIFT, South street, Roslindale.
" W. F. TEMPLE, 240 Huntington avenue.
" J. M. THOMPSON, 33 Hollis street.
" A. H. TOMPKINS, 20 Seaverns avenue, Jamaica Plain.
" E. A. TRACY, 99 Broadway, South Boston.
" E. T. TWITCHELL, 35 Alban street, Dorchester.
" GEO. A. WEBSTER, 28 Greenwich park.
" FRANK E. BATEMAN, Dexter row, Charlestown.

Dr. JOHN W. DEWIS, 579 Tremont street.

“ JOHN E. BUTLER, 310 Warren street, Roxbury.

Following is a list of the stations for diphtheria culture tubes, supplied by the Board of Health for use of all physicians of Boston. Culture tubes should be returned to the station from which they are taken, before 4 o'clock, P.M., or sent to the Medical College, corner Exeter and Boylston streets, on the day of making the culture.

B. F. STACEY, 4 Thompson square, Charlestown.

C. HERBERT PACKARD, 46 Maverick square, East Boston.

GEO. H. ALEXANDER, 100 Dorchester street, South Boston.

ALEX H. COPLEY, 45 Hancock street, Dorchester.

CHAS. B. ROGERS & Co., 701 Centre street, Jamaica Plain.

SAMUEL T. JEFFERS, Jr., 738 South street, Roslindale.

I. P. GAMMON, 150 Dudley street, Roxbury.

T. T. REID, 3101 Washington street, Egleston square.

S. A. D. SHEPPARD & Co., 1129 Washington, cor. Dover street.

A. W. TILTON, 71 Prince street.

G. B. SQUIRE, 65 Cambridge street.

HENRY CANNING, 57 Chambers street.

WM. D. WHEELER, Massachusetts avenue, cor. Beacon.

WM. D. WHEELER, 393 Cambridge street, Allston.

FREDERICK W. ARCHER, 1193 Washington street, Dorchester.

HARVARD MEDICAL SCHOOL, cor. Boylston and Exeter streets.

Is. B. KRONBERGER, 996 Washington street.

T. METCALF & Co., 39 Tremont st., and Copley sq. cor. Clarendon st.

C. J. COUNTIE, Chestnut street, cor. Charles street.

G. W. WARREN, 343 Washington street, Brighton.

F. W. MOORE, 377 Cambridge street, Brighton.

[EXTRACT FROM THE PUBLIC STATUTES.]

SECTION 75. When a disease dangerous to the public health ^{If dangerous} breaks out in a town, the board shall immediately provide such ^{disease} hospital or place of reception for the sick and infected as is judged ^{breaks out,} best for their accommodation and the safety of the inhabitants, ^{board to} which shall be subject to the regulations of the board; and the ^{provide hos-} board may cause any sick and infected person to be removed ^{pital, etc.} thereto, unless his condition will not admit of his removal without ^{P. S., c. 80.} § 75. danger to his health, in which case the house or place where he remains shall be considered as a hospital, and all persons residing in or in any way concerned within the same shall be subject to the regulations of the board as before provided.

SECT. 76. When such disease is found to exist in a town, the ^{Selectmen to} selectmen and board of health shall use all possible care to pre- ^{give notice} vent the spreading of the infection, and to give public notice of ^{of infected} infected places to travellers, by displaying red flags at proper dis- ^{places.} tances, and by all other means which in their judgment shall be ^{P. S., c. 80.} § 76. most effectual for the common safety. And whoever obstructs the selectmen, board of health, or its agent, in using such means

to prevent the spreading of the infection, or wilfully removes, obliterates, defaces, or handles the red flags or other signals so displayed, shall forfeit for each offence not less than ten nor more than one hundred dollars.

The school committee shall not allow any pupil to attend the public schools while any member of the household to which such pupil belongs is sick of small-pox, diphtheria, or scarlet fever, or during a period of two weeks after the death, recovery, or removal of such sick person; and any pupil coming from such household shall be required to present, to the teacher of the school the pupil desires to attend, a certificate, from the attending physician or board of health, of the facts necessary to entitle him to admission in accordance with the above regulation.

School committees not to allow children sick with contagious diseases to attend school. Certificate of recovery required. 1886, 198, § 1.

SCHOOL-HOUSES.

The ordinary complaints, inspections, and repairs of minor sanitary defects of the school-houses have had the usual attention the past year. In the autumn, however, several cases came to our notice in which the sanitary defects were sufficiently serious to warrant summary action on the part of the Board of Health and of the School Board. Several schools were suspended for brief periods, while changes in the sanitary appliances were being made. Considerable interest in school districts and in the community was aroused. An interview between the Mayor and members of the Board of Health, about that time, resulted in His Honor's asking for a list of school-houses with which there were connected such bad sanitary appliances as we would have abolished at once.

The following communication and a list of school-houses, omitted here, were sent :

NOVEMBER 1, 1895.

HON. E. U. CURTIS, *Mayor* :

DEAR SIR: In compliance with your request the Board of Health caused an examination of the privy vaults connected with the school-houses of the city, and respectfully reports that in addition to those which have been recently reported and which are now undergoing changes, the following list of privy vaults are found to be in an offensive and objectionable condition.

The Board would also respectfully report that there are many instances of overcrowding and lack of ventilation of school-rooms, and that a small list of the worst ones will be transmitted to you within a few days.

Very respectfully,

THE BOARD OF HEALTH,
by S. H. DURGIN, *Chairman*.

The Mayor having expressed a desire to meet any urgent demands for sanitary improvements in the school-houses, the Board of Health promised, as will be seen in the foregoing communication, to make another list of school-houses in which overcrowding and the lack of ventilation required early attention. The preparation of the second list, however, was deferred on account of a proposition made to the Board of Health by a Committee of the Association of Collegiate Alumnae. This committee, with the aid of experts from the Institute of Technology, proposed an examination of the school-houses similar to that which was made by the Board of Health in 1889, and reported, with recommendations, to the City Council. The Board of Health cordially approved the committee's proposition and offered every facility and aid in its power. This work is now in progress. The Board of Health is gratified at the emphatic position taken by His Honor the Mayor, in his inaugural address to the new City Council on the school-house question, and by his subsequent act in appointing a committee of experts on ventilation and sanitary architecture. This committee is expected to utilize the data furnished by the examinations now in progress, and to make such other examinations as may be considered necessary, and to report to the Mayor the deficiencies found in ventilation, heating, and the sanitary appliances, the practical and efficient methods of correcting such faults in the old school-houses, and suggestions for future school-house construction.

The Board of Health, therefore, refrains from any additional recommendations at this time, believing that there is every reason to expect the best results from the process now in full operation under the direction of the Mayor.

In view of the fact that contagious diseases may easily be spread in the schools through the medium of infected books, pencils, sponges, slates, desks, and other surfaces of the school-room, handled or used by the children, the following recommendation was made to the School Committee in 1894 :

HEALTH DEPARTMENT, OLD COURT-HOUSE,
BOSTON, November 27, 1894.

To the Honorable School Committee, City of Boston :

GENTLEMEN: The Board of Health begs respectfully to recommend that the desks, chairs, window-sills, wainscotings, doors, door-knobs, and such other surfaces as are likely to be handled by the children within the school buildings, be carefully rubbed with cloths or sponges, wet with a solution of corrosive sublimate (one part of corrosive sublimate to 1,000 parts of water), as often as every Saturday during the school year; that the floors of the school-houses be well covered with sawdust, thoroughly wet with the same disinfecting solution, at least once a week, and the sawdust swept up and burned; that the use of all slates, slate-pencils, and sponges for slate use be discontinued, and that paper and lead-pencils be substituted.

The disinfection of books is scarcely practicable except by fire, and the Board would recommend, whenever it is known that a book has been handled by a pupil who was, at the time, affected with a contagious disease, or the book is otherwise much soiled, it be immediately burned.

Very respectfully,

THE BOARD OF HEALTH,

By S. H. DURGIN,

Chairman.

The following action was subsequently taken by the School Committee :

REPORT OF COMMITTEE ON HYGIENE AND PHYSICAL TRAINING.

DECEMBER 11, 1894.

The Committee on Hygiene and Physical Training, to whom was referred—October 27—an order “that the Committee on Hygiene and Physical Training consider and report what action, if any, can be taken by this Board to disinfect, or render aseptic, the school-books used in the schools,” report that careful consideration was given to the order, but no practical method could be found.

Up to this time nothing but fire is considered a sure disinfectant, therefore the books could be rendered aseptic only by destruction at stated intervals. As this committee does not feel at liberty to recommend this action, they have no suggestion to offer concerning the disinfection of books; however, that it will be entirely practicable to discontinue the use of slates and slate-pencils, and the necessary accompaniment, sponges. There are three good reasons why the use of slates and slate-pencils should be discontinued :

First, a light gray mark upon a slightly darker gray surface is more or less indistinct, and trying to the eyesight.

Second, the resistance of the hard pencil upon the hard slate is tiring to the muscles, and the resistance, to which the muscles are trained by the use of slates and slate-pencils, must be overcome when beginning to write with pencil or pen upon paper.

Third, and last, but not least, the use of slates, slate-pencils, and sponges is a very uncleanly custom, and leads to and establishes very uncleanly habits.

The committee also deprecates the custom of the daily distribution and regathering of lead-pencils, for the reasons which must be apparent to all after a moment's consideration. The pencil not infrequently finds a resting-place between the teeth and lips, and it is hardly to be supposed that the same pencil will be given to the same pupil the next day.

The committee, therefore, recommend the passage of the following orders:

Ordered, That the use of slates and slate-pencils and sponges be discontinued, and that paper, lead-pencils, and rubber erasers be supplied in their places.

Ordered, That lead-pencils and erasers be given to each pupil at the beginning of the term, to be retained by the pupil for his sole use during the school year.

June 25, 1895.

Ordered, That the Committee on Accounts be requested to direct janitors to cover during the summer vacation all the floors of school-houses with sawdust wet with a solution of bicloride of mercury (one part of bicloride of mercury to 3,000 parts of water), and sweep the sawdust before it becomes dry; also sponge off all chairs, desks, window-sills, wainscotings, doors, and door-knobs with a solution of the same strength, and wipe off with a wet cloth before they become dry. All applications may be made with a sponge or cloth mounted upon a handle or stick, so that the hands need not be put into the solution.

DIPHTHERIA.

A detailed account of the work of culture diagnosis of diphtheria and the production of antitoxine will be found in the following report by Prof. Harold C. Ernst:

Boston, January 15, 1896.

GENTLEMEN: I have the honor of presenting herewith a report of the work carried on by me for your Board during the past year.

As you are aware, I have conducted two branches,—the cultural examination of suspected cases of sore throat; and the production and distribution of the antitoxine of diphtheria.

I.

The Cultural Diagnosis of Cases of Sore Throat.

This was begun under your official sanction and support, on the 1st of November, 1894, and has been continued during the intervening time, with apparently increasing satisfaction on the part of the medical profession at large.

The only complaint that I am aware of is the occasional occurrence of cases of diphtheria in which the bacilli have persisted in cultures for what has seemed to the patients an unreasonably long time, and from what has been said, it might be thought that this happens more frequently than is actually the case.

To determine this point, I have made out the following table from all cases that have been sent to the laboratory for examination from September 1, 1895, to January 1, 1896 :

Total number of cases	.	.	.	.	.	.	.	.	2,443
Cases showing bacilli of diphtheria	.	.	.	.	.	.	.	.	909
Number of cases running over two weeks before a negative culture was obtained	.	.	.	.	.	.	.	.	116
Negative culture between 2 and 3 weeks	.	.	.	.	.	.	.	.	63
“ “ “ 3 “ 4 “	.	.	.	.	.	.	.	.	30
“ “ “ 4 “ 5 “	.	.	.	.	.	.	.	.	11
“ “ “ 5 “ 6 weeks	.	.	.	.	.	.	.	.	7
“ “ “ 6 “ 7 “	.	.	.	.	.	.	.	.	4
“ “ “ 7 “ 8 “	.	.	.	.	.	.	.	.	1
Total	.	.	.	.	.	.	.	.	116

From this it appears that 93 of the cases kept over two weeks were discharged, so far as this examination is concerned, before the end of four weeks, and that only 23 out of 909 were kept in quarantine for a longer time.

Taking into consideration the very large number that were discharged in a shorter time than two weeks, — much shorter than was formerly considered wise, — and the added safety that is given by keeping these “delayed” cases under observation, it does not seem as if any reasonable person could object, even at the expense of apparent hardship, in a few cases. This apparent hardship is certainly for the benefit of the community if not for that of the patient. . . .

The chart submitted herewith is more eloquent than anything else that could be presented in showing the amount of work done in this direction for your Board.

It presents in three curves, and by week, the number of cases received from the official beginning of the work up to

January 1, 1896; the number of new cases received each week, and the number of cases in which the bacilli of diphtheria were found, in the upper, middle, and lower curves, respectively.

Beginning with the 1st of November, 1894, the number rises very rapidly until it reaches its maximum (with one exception) in the first week of December, 1894. There is a sharp fall in the number of cases sent in, in the weeks of December 23 to January 6, corresponding to the closing of the schools. The rise during the weeks from January 21 to February 10, and the one which reaches its height in the week of March 11 to 17 are due to an extra amount of activity at the Children's Hospital; during these periods many cases were sent in from there for experiment, and the increased number of examinations is not accompanied by an increase in the number of cases of diphtheria.

The number of cases sent in in any one week was lowest from August 26 to September 1 (70); highest, December 2 to 8 (265).

The number of *new* cases was lowest August 19 to 25 (46); highest, December 3 to 9, 1894 (94). The number of cases of diphtheria found was lowest April 1 to 7 (6); highest, November 25 to December 1, 1895 (66).

The total examinations made for the whole period have been 8,644; the lowest daily average for any month was 11, during August and September, and the highest 33, during December, 1895. The daily average of November, 1894, was 13; the daily average of November, 1895, was 28; of December, 1894, 27; of December, 1895, 33, showing a marked increase in the use of this method of diagnosis by the profession.

The total number examined in November, 1894, was 397; in November, 1895, 835; in December, 1894, 823; in December, 1895, 1,023.

There were sent in 402 cases showing no growth, and these are to be neglected, leaving 8,242 cases in which the results were more or less satisfactory. Of these, 1,717 were found to contain the bacilli of diphtheria, a percentage of a little less than 21. The amount of work represented by these figures is enormous, and, I am glad to say, it has been

carried on with as little friction as could reasonably be expected.

The laboratory has been opened for the reception of cultures *every day in the year*, and the reports have been sent out with much promptness.

The experience of the year has been confirmatory of the feeling that the results obtained from the use of the platinum wire for securing the material for cultures are the best for general purposes; the increased accuracy more than counterbalances the slight amount of added labor to the physician. The substitution of copper cases has been carried on as fast as possible, and the ease with which the outfits are now sterilized is a needed change in the methods employed.

The work suffered a severe loss in June last, when Dr. J. H. McCollom severed his connection with it, and changes in the staff concerned in this branch of your work have been frequent. Since I took charge I have had the following assistants: Drs. C. G. Page, J. N. Coolidge, J. W. Hastings, E. A. Burnham, J. T. Bottomly, C. N. Hayward, C. M. Smith, J. C. Donoghue, E. A. Darling, and C. A. Ewald; and of these, Drs. E. A. Darling, C. M. Smith, and C. A. Ewald are at present at work.

II.

The Production of the Antitoxine of Diphtheria.

The preparation of this material was begun by me as soon as I was placed in charge of the work by your Board, in December, 1894, and has been vigorously and successfully prosecuted since that time. Some time was consumed in getting together the necessary apparatus, animals, and assistants. The cultures have all been made under my direct supervision, and the injections of the horses have been carried out at the place originally selected on Gallop's Island.

The horses have been chosen with great care by the Veterinarian of the Board, Dr. Burr. Every one of them has been young, — none of them over seven years, — and perfectly sound. They have all been tested with tuberculin and mallein, and kept under observation for some weeks before commencing immunization. A brief history of each animal is appended.

Horse I. — Gray Gelding.

December 31, 1894.	Tested with mallein.	No reaction.
January 4, 1895.	Tested with tuberculine.	No reaction.
January 25, 1895.	1st injection,	0.5 c.c. toxine.
“ 30, “	2d “	1 “ “
February 1, “	3d “	2 “ “
“ 4, “	4th “	3 “ “
“ 7, “	5th “	4.5 “ “
“ 11, “	6th “	9 “ “
“ 16, “	7th “	10 “ “
“ 19, “	8th “	15 “ “
“ 22, “	9th “	17 “ “
March 1, “	10th “	26 “ “
“ 5, “	11th “	30 “ “
“ 7, “	12th “	35 “ “
“ 12, “	13th “	40 “ “
“ 15, “	14th “	60 “ “
April 9, “	15th “	60 “ “
“ 12, “	<i>Died.</i>	Autopsy showed no lesions.

Total number of injections, 15.

Total amount injected, 313 c.c.

Loss of weight from 976 to 905 pounds. (The scales for weighing the horses were not promptly at hand, otherwise perhaps the loss of weight would have attracted attention earlier.)

Horse II. — Gray Mare.

December 31, 1894.	Tested with mallein.	No reaction.
January 4, 1895.	Tested with tuberculine.	No reaction.
January 25, 1895.	1st injection,	0.5 c.c. toxine.
“ 30, “	2d “	1 “ “
February 1, “	3d “	2 “ “
“ 4, “	4th “	3 “ “
“ 7, “	5th “	7 “ “
“ 11, “	6th “	9.75 “ “
“ 16, “	7th “	10 “ “
“ 19, “	8th “	17 “ “
“ 22, “	9th “	19 “ “
March 1, “	10th “	28 “ “
“ 4, “	11th “	35 “ “

March	12,	1895.	12th injection,	40	c.c.	toxine.
"	15,	"	13th	"	55	" "
"	19,	"	14th	"	50	" "
"	22,	"	15th	"	53	" "
"	26,	"	16th	"	80	" "
April	2,	"	17th	"	100	" "
"	9,	"	18th	"	140	" "

There was a marked loss of weight, from 960 to 881 pounds, and the injections were suspended. Was kept under observation until June 28, 1895, and then as there was no gain in weight, was removed from the island. Is still, January 15, 1896, in good condition, but has not gained much in weight.

Total number of injections, 18.

Total amount injected. 650.25 c.c.

Horse III. — Bay Mare.

December 31,	1894.	Tested with mallein.	No reaction.
January 4,	1895.	Tested with tuberculine.	No reaction.
January	25,	1895, 1st injection,	0.5 c.c. toxine.
"	30,	" 2d	" 1 " "
February	1,	" 3d	" 2 " "
"	4,	" 4th	" 3 " "
"	7,	" 5th	" 5.5 " "
"	11,	" 6th	" 10 " "
"	16,	" 7th	" 10 " "
"	19,	" 8th	" 12 " "
"	22,	" 9th	" 16 " "
"	26,	" 10th	" 20 " "
March	1,	" 11th	" 26 " "
"	5,	" 12th	" 35 " "
"	12,	" 13th	" 40 " "
"	15,	" 14th	" 55 " "
"	22,	" 15th	" 70 " "

An enormous œdema occurred at the site of the last injection, and the animal became extremely weak. Paralytic symptoms (posterior extremities), made their appearance on April 2. Died on April 11. Autopsy showed no lesions.

Total number of injections, 15.

Total amount injected, 306 c.c.

Loss of weight from 1,010 to 890 pounds.

Horse IV. — Bay Gelding.

December 31, 1894. Tested with mallein. No reaction.

January 4, 1895. Tested with tuberculine. No reaction.

January	25,	1895,	1st	injection,	0.5 c.c.	toxine.
"	30,	"	2d	"	1	" "
February	1,	"	3d	"	2	" "
"	4,	"	4th	"	2	" "
"	7,	"	5th	"	6	" "
"	11,	"	6th	"	10	" "
"	16,	"	7th	"	10	" "
"	19,	"	8th	"	12	" "
"	22,	"	9th	"	17	" "
"	26,	"	10th	"	22	" "
March	1,	"	11th	"	27	" "
"	5,	"	12th	"	33	" "
"	12,	"	13th	"	40	" "
"	15,	"	14th	"	40	" "
"	19,	"	15th	"	60	" "
"	26,	"	16th	"	80	" "
April	2,	"	17th	"	105	" "
"	9,	"	18th	"	160	" "
"	23,	"	19th	"	175	" "
May	7,	"	20th	"	400	" "
"	22,	"	21st	"	200	" "
"	31,	"	22d	"	395	" "
June	13,	"	First bleeding, 2.5 liters drawn.			
"	25,	"	23d	injection,	360	c.c.
July	6,	"	24th	"	140	"
"	8,	"	25th	"	225	"
"	16,	"	Second bleeding, 3.1 liters (1-50,000 strength).			
"	31,	"	26th	injection,	105	c.c.
August	6,	"	27th	"	160	"
"	9,	"	28th	"	75	"
"	17,	"	Third bleeding, 2.75 liters (1-50,000 strength).			

August	28, 1895,	29th injection,	125 c.c.
September	18, "	30th "	300 "
"	24, "	Fourth bleeding,	3 liters (1-50,000 strength).
October	1, "	31st injection,	175 c.c.
"	15, "	32d "	150 "
"	28, "	33d "	100 "
November	13, "	Fifth bleeding,	2.5 liters (1-50,000 strength, 940 c.c. of serum).
"	19, "	34th injection,	185 c.c.
"	26, "	35th "	160 "
December	13, "	36th "	140 "
"	24, "	Sixth bleeding,	1.33 liters (1-50,000 strength, 300 c.c. of serum).
January	2, 1896,	37th injection,	220 c.c.
"	14, "	38th "	100 "
Total number of injections, 38.			
Total amount injected, 4517.50 c.c.			
Number of bleedings, 6.			
Amount of blood drawn, 15.08 liters.			

Horse V.—Chestnut Gelding.

December 31, 1894. Tested with mallein. No reaction.
 January 4, 1895. Tested with tuberculine. No reaction.

January	21, 1895,	1st injection,	0.5 c.c.
"	30, "	2d "	1 "
February	1, "	3d "	2 "
"	4, "	4th "	3 "
"	7, "	5th "	6 "
"	11, "	6th "	10 "
"	16, "	7th "	10 "
"	19, "	8th "	18 "
"	22, "	9th "	22 "
"	26, "	10th "	20 "
March	1, "	11th "	26 "
"	5, "	12th "	37 "
"	12, "	13th "	45 "
"	15, "	14th "	60 "

March	19,	1895,	15th injection,	10	c.c.
"	22,	"	16th "	70	"
"	29,	"	17th " .	90	"
April	2,	"	18th "	100	"
"	9,	"	19th "	142	"
"	23,	"	20th "	185	"
May	7,	"	21st "	340	"
"	21,	"	First bleeding,	0.9 liters	(1-75,000).
"	28,	"	22d injection,	400	c.c.
June	10,	"	Second bleeding,	1.3 liters	(1-50,- 000).
"	30,	"	23d injection,	200	c.c.
July	18,	"	24th "	250	"
"	25,	"	Third bleeding,	2.5 liters	(490 c.c. of serum, 1-50,000).
August	5,	"	25th injection,	175	c.c.
"	17,	"	26th "	100	"
"	22,	"	Fourth bleeding,	2 liters	(440 c.c. of serum, 1-50,000).
"	26,	"	27th injection,	200	c.c.
September	9,	"	28th "	150	"
"	17,	"	Fifth bleeding,	2 liters	(660 c.c. of serum, 1-50,000).
October	1,	"	29th injection,	395	c.c.
"	15,	"	Sixth bleeding,	4 liters	(1-50,000).
"	23,	"	30th injection,	180	c.c.
November	13,	"	31st "	105	"
"	19,	"	32d "	270	"
"	26,	"	Seventh bleeding,	3 liters	(710 c.c. of serum, 1-100,000).
December	3,	"	33d injection,	275	c.c.
"	13,	"	34th "	130	"
"	24,	"	35th "	300	"
January	2,	1896.	Eighth bleeding,	2 liters	(430 c.c.)
"	10,	"	36th injection,	175	c.c.
"	18,	"	37th "	250	"

Total number of injections, 37.

Total amount injected, 4,752.5 c.c.

Number of bleedings, 8.

Amount of blood drawn, 17.7 liters.

Horse VI. — Gray Gelding.

February 21, 1895. Tested with mallein. No reaction.

March 5, 1895. Tested with tuberculine. No reaction.

March	19, 1895	1st injection,	0.5	c.c.
"	22, "	2d	"	1 "
"	26, "	3d	"	1.5 "
"	29, "	4th	"	3 "
April	2, "	5th	"	5 "
"	5, "	6th	"	10 "
"	16, "	7th	"	15 "
"	23, "	8th	"	25 "

Further injections were omitted, for the reason that the horse was unruly and becoming dangerous. At no time was any reaction secured from the injections.

Horse VII. — Bay Gelding.

February 21, 1895. Tested with mallein. Reacted to 104.2.

February 25, 1895, shot. Autopsy (Dr. Burr) showed nothing abnormal.

Horse VIII. — Black Gelding.

May 9, 1895. Tested with mallein. No reaction.

May	28, 1895,	1st injection,	0.5	c.c.
"	31, "	2d	"	1 "
June	7, "	3d	"	2 "
"	11, "	4th	"	5 "
"	13, "	5th	"	9 "
"	17, "	6th	"	11 "
"	22, "	7th	"	25 "
"	25, "	8th	"	35 "
"	29, "	9th	"	104 "
July	15, "	10th	"	96 "
"	25, "	11th	"	140 "
August	6, "	12th	"	175 "
"	16, "	13th	"	210 "
"	26, "	14th	"	200 "

September	3,	"	First bleeding, 1 liter (1-100,000).
"	9,	"	15th injection, 175 c.c.
"	18,	"	16th " 235 "
October	1,	"	17th " 185 "
"	22,	"	18th " 180 "
"	29,	"	Second bleeding, 2.5 liters (1-100,000).
November	18,	"	19th injection, 220 c.c.
December	2,	"	20th " 330 "
"	17,	"	Third bleeding, 3 liters (1,210 c.c. serum, 1-50,000).
December	28, 1895,		21st injection, 300 c.c.
January	7, 1896,	22d	" 200 "
"	11,	"	23d " 230 "

Total number of injections, 23.

Total amount injected, 3,068.5 c.c.

Number of bleedings, 3.

Amount of blood, 6.5 liters.

Horse IX. — Black Gelding.

May 9, 1895. Tested with mallein. No reaction.			
May	28, 1895,	1st injection,	0.5 c.c.
"	31, "	2d "	1 "
June	7, "	3d "	2 "
"	11, "	4th "	5 "
"	13, "	5th "	9 "
"	17, "	6th "	13 "
"	22, "	7th "	20 "
"	25, "	8th "	32 "
"	29, "	9th "	55 "
July	5, "	10th "	70 "
"	15, "	11th "	105 "
"	25, "	12th "	155 "
August	7, "	13th "	140 "
"	16, "	14th "	125 "
"	21, "	15th "	265 "
September	8, "	First bleeding, 2 liters (1-50,000).	
"	18, "	16th injection, 265 c.c.	
October	1, "	17th " 185 "	
"	8, "	Second bleeding, 3 liters (1-50,000).	

October	22, 1895,	18th injection,	235 c.c.
November	18, "	19th "	200 "
"	30, "	Third bleeding,	3 liters (1-50,000).
December	13, "	20th injection,	340 c.c.
"	28, "	21st "	245 "
January	7, "	22d "	300 "
"	14, "	Fourth bleeding,	2 liters (330 c.c.).

Total number of injections, 22.

Total injected, 2,767.5 c.c.

Number of bleedings, 4.

Amount of blood, 7 liters.

Horse X. — Brown Gelding.

(From New York Board of Health, — already immunized.)

June	30, 1895,	1st injection,	225 c.c.
July	6, "	First bleeding,	2.5 liters (1-75,000).
"	15, "	2d injection,	240 c.c.
"	25, "	3d "	140 "
August	1, "	Second bleeding,	3 liters (720 c.c. of serum, 1-50,000).
"	10, "	4th injection,	50 c.c.
"	11, "	5th "	75 "
"	20, "	6th "	150 "
"	26, "	7th "	140 "
"	29, "	Third bleeding,	3 liters (830 c.c. of serum, 1-50,000).
September	9, "	8th injection,	140 c.c.
"	18, "	9th "	255 "
"	30, "	Fourth bleeding,	1.8 liters (530 c.c. of serum, 1-50,000).
October	12, "	10th injection,	150 c.c.
"	28, "	11th "	135 "
November	6, "	Fifth bleeding,	3 liters (750 c.c. of serum, 1-100,000).
"	13, "	12th injection,	125 c.c.
"	19, "	13th "	245 "
"	30, "	14th "	195 "
December	14, "	Sixth bleeding,	3 liters (830 c.c. of serum, 1-50,000).

December	24, 1895,	15th injection,	275 c.c.
January	2, 1896,	16th “	300 “
“	10, “	17th “	200 “
“	17, “	Seventh bleeding,	2.5 liters.

Total number of injections, 17.

Amount injected, 3,040 c.c.

Number of bleedings, 7.

Amount of blood drawn, 18.8 liters.

Horse XI. — Black Mare.

(From New York Board of Health, — already immunized.)

June	30, 1895,	1st injection,	225 c.c.
July	9, “	First bleeding,	2.5 liters (1-75,000).
“	18, “	2d injection,	250 c.c.
“	29, “	3d “	150 “
August	8, 1895,	Second bleeding,	0.5 liters (210 c.c. of serum, 1-50,000).
“	24, “	4th injection,	200 c.c.
September	5, “	Third bleeding,	1 liter (1-50,000).
“	11, “	5th injection,	175 c.c.
“	28, “	6th “	230 “
October	3, “	Fourth bleeding,	3 liters (1-50,000).
“	15, “	7th injection,	150 c.c.
“	28, “	8th “	170 “
November	13, “	9th “	180 “
“	22, “	Fifth bleeding,	3 liters (650 c.c. of serum, 1-50,000).
“	30, “	10th injection,	160 c.c.
December	17, “	11th “	230 “
“	11, “	12th “	250 “
January	2, 1896.	Sixth bleeding,	2 liters (400 c.c. of serum, 1-50,000).
“	10, “	13th injection,	180 c.c.
“	18, “	14th “	250 “

Total number of injections, 14.

Amount injected, 2,800 c.c.

Total number of bleedings, 6.

Amount of blood, 12 liters.

A very rough estimate of the productiveness of each horse may be formed from the following table, showing the number of bleedings, and the approximate amounts of serum obtained from each animal :

Horse	IV, 6 bleedings,	3,500 c.c. of serum.
"	V, 8	" 4,000 " " "
"	VIII, 3	" 1,700 " " "
"	IX, 4	" 2,000 " " "
"	X, 7	" 4,500 " " "
"	XI, 6	" 2,500 " " "

These amounts represent the totals drawn, but as some of the animals became productive before the others, in order to even approximate the amounts to be obtained from the present plant, a second table has been prepared which includes the totals from all the horses in the time that they have all been immunized, *i.e.*, from the last of August, 1895.

Horse	IV, 2,500 c.c. of serum.
"	V, 3,500 " " "
"	VIII, 1,700 " " "
"	IX, 2,000 " " "
"	X, 3,500 " " "
"	XI, 2,500 " " "

Total, 15,700 c.c. of serum,

or nearly 1,000 c.c. a week, which amount can be somewhat increased, and would represent 52,000 c.c. a year; or sufficient for 5,200 doses at 10 c.c. a dose, or even more if the strength of the serum can be increased, and provided that nothing happens to any of the horses, which would make it necessary to give up one or more of them as a source of supply. Of the amount already produced, more than 5,000 c.c. has been of a greater strength than 1 to 50,000, and it is hoped that we shall be able to increase the proportion of the serum of this strength.

During the entire time of my trips down the harbor, in connection with this work, I have enjoyed the constant com-

pany and assistance of the Port Physician, Dr. D. D. Brough, and it is not possible to state too emphatically of how great value his assistance has been, not only in helping me whenever occasion required, but in the active prosecution of the work in the intervals between my visits. In the laboratory work, Drs. S. A. Hopkins, C. G. Page, J. N. Coolidge, and J. W. Courtney have been engaged, and Drs. Coolidge and Courtney are now there.

We have had about the same difficulties in the preparation of the toxines as are spoken of by other observers, and we are indebted to Dr. W. H. Park, of New York, for valuable advice and assistance in various ways. In common with others, we have not found that the aëration of the cultures is necessary for the rapid or certain production of the toxines, but we find that twelve to fourteen days is sufficient, if the bouillon be more highly peptonized, following the suggestion of Dr. Park.

As the result of the work in this direction it has been possible to distribute (January 15, 1896) 14,960 c.c. of antitoxine of a minimum strength of 1-50,000, and about one-third of it of a strength of 1-100,000. Roughly speaking, this amount has been sent as follows:

To the Boston City Hospital	11,800 c.c.
To the Children's Hospital	1,320 c.c.
To the Boston Dispensary	400 c.c.
To outside applicants	1,440 c.c.

There is now ready for distribution a supply of over 2,000 c.c., and the production is likely to be sufficient so long as the distribution is restricted in the present manner. It is perhaps well to remember that at the average market price of the commercial antitoxine, this supply represents a money value of over thirteen thousand dollars (\$13,000).

The results of the use of the antitoxine, so far as they have been reported, are given in some detail; for they are of value, not only as showing the results of the work done for your Board, but as helping to determine the value of the antitoxine itself; of which at present there seems to be small room for doubt.

There have been returned to me at this date (January 15, 1896) reports of the results of the use of the antitoxine supplied by your Board in 743 cases, divided as follows :

Recoveries	.	.	.	.	.	550
Deaths	.	.	.	.	.	97
Immunizing	.	.	.	.	.	96
						<hr/> 743

For securing these reports a blank similar to the one below is issued with each bottle of the serum.

CITY OF BOSTON BOARD OF HEALTH.

REPORT OF USE OF ANTITOXINE OF DIPHTHERIA.

Date,

Name,

Address,

Age, Sex, M. S. W.

Character of Disease, mild, — or severe constitutional symptoms?

Membrane, — None, — Slight, — Extensive?

How long since symptoms appeared?

Any Bacteriological test made?

What result?

Number on bottle,

How much injected?

Results (including any after effects, such as Urticaria, Albuminuria, etc.,).....

.....

.....

SIGNED, M.D.

NOTE. (For the proper carrying on of the preparation of the antitoxine, it is necessary that this blank be filled out and returned as soon as possible to HAROLD C. ERNST, M.D., Harvard Medical School, Cor. Boylston and Exeter Streets, Boston.)

Recoveries. — Of the 550 recoveries reported, 451 occurred in the Boston City Hospital, 3 in the Children's Hospital, and 96 in private practice. They may be classified as follows :

	Male.	Female.
Below 6 months	1	0
Between 6 and 12 months	0	1
" 1 " 2 years	15	10
" 2 " 3 "	11	21
" 3 " 4 "	23	22
" 4 " 5 "	18	40
" 5 " 6 "	26	32
" 6 " 7 "	26	31
" 7 " 8 "	22	23
" 8 " 10 "	29	32
" 10 " 15 "	37	42
" 15 " 20 "	11	10
" 20 " 30 "	18	30
Above 30 years	5	14

Making 242 males, and 308 females.

Of these cases 410 are noted as having mild or no constitutional symptoms, 140 as having severe symptoms, at the time of the administration of the antitoxine. The existence of membrane is noted as follows :

None	26
Slight	257
Extensive	249
Not mentioned	18

Nineteen cases of laryngeal and one of nasal membrane are noted in addition.

The duration of the symptoms (of course only approximate) before the administration of the antitoxine is as follows:

One day	100
Two days	159
Three days	100
Four days	38
Five days	22
Six days (or over)	16
Not noted	15

Five hundred and forty-two are reported to have had a culture made, with a positive result in 496, negative in 53, not stated 1.

There have been 83 patients treated with serum from horse IV.	
" " " 109 " " " " " " V.	
" " " 72 " " " " " " VIII.	
" " " 19 " " " " " " IX.	
" " " 125 " " " " " " X.	
" " " 74 " " " " " " XI.	
Not stated 68	

The amounts given have varied in accordance with the following table:

3 c.c. given to 3 patients.	15 c.c. given to 11 patients.
5 c.c. " " 73 "	20 c.c. or over " 25 "
7 c.c. " " 10 "	Not stated, 2 "
10 c.c. " " 426 "	

There have been reported 93 cases of urticaria, the vast majority of them slight, localized at the point of injection,

and ephemeral in character ; but it is proper to say, however, that many of the reports have been returned too soon for the possibility of the occurrence of urticaria to be excluded. The relations of the cases reported are taken up somewhat more in detail below.

Two cases of slight localized paralysis have been reported, and 90 cases of albuminuria, these mostly occurring *before* the administration of the antitoxine. They are grouped in accordance with the following :

								Males.	Females.
2 to 3 years	.	.	.	.	.	.	.	1	2
3 to 4 "	.	.	.	.	.	.	.	7	5
4 to 5 "	.	.	.	.	.	.	.	4	8
5 to 6 "	.	.	.	.	.	.	.	2	5
6 to 7 "	.	.	.	.	.	.	.	6	9
7 to 8 "	.	.	.	.	.	.	.	4	2
8 to 10 "	.	.	.	.	.	.	.	4	5
10 to 15 "	.	.	.	.	.	.	.	8	5
15 to 20 "	.	.	.	.	.	.	.	1	3
20 to 30 "	.	.	.	.	.	.	.	2	3
30 years and over.	.	.	.	.	.	.	.	1	3

which does not appear to show any especial preponderance of cases according to age or sex.

There are reported among the recoveries 18 cases of intubation, and 8 of sepsis, and 6 cases are noted as having had bacilli persisting over 2 weeks after the administration of the antitoxine.

The deaths numbered 97, and are tabulated upon the accompanying chart, from which any reasonable amount of information may be worked out. The upright columns denote the age and sex, the lateral columns the various data, and the numbers at the tops of the columns are to be followed downwards for information in regard to any particular case. For example : the small figure 1 in the male column between 6 to 12 months means that this was the first male child between 6 and 12 months that was reported to us as having died, that the patient had severe constitutional symptoms, that the amount of membrane and taking of a culture were not reported (the figure 1 being

absent in these columns), that the antitoxine from Horse VIII. was given in a dose of 5 c.c., that intubation was performed, and that the disease had existed for 2 days. In the same way any other number may be followed downwards, and all the information of that case that we have may be read off, while any particular points not mentioned below may be studied out for one's self.

Some of the facts of interest shown by this chart may, however, be stated as follows:

The deaths are distributed among the following ages:

							Males.	Females.
6 to 12 months	.	.	.	.	.	.	1	0
1 to 2 years	.	.	.	.	.	.	8	5
2 to 3 "	.	.	.	.	.	.	8	9
3 to 4 "	.	.	.	.	.	.	8	3
4 to 5 "	.	.	.	.	.	.	5	5
5 to 6 "	.	.	.	.	.	.	4	9
6 to 7 "	.	.	.	.	.	.	4	5
7 to 8 "	.	.	.	.	.	.	2	2
8 to 10 "	.	.	.	.	.	.	5	4
10 to 15 "	.	.	.	.	.	.	3	5
15 to 20 "	.	.	.	.	.	.	1	0
20 to 30 "	.	.	.	.	.	.	0	0
30 years and over	.	.	.	.	.	.	1	0

An increased number of statistics of this sort will furnish very valuable data as to the relative resisting power of the two sexes to this disease.

Of the 97 deaths 95 showed severe constitutional symptoms *before* the administration of the antitoxine; 2 only slight, but these 2 both had extensive membrane formation. In 81 there was extensive membrane and severe constitutional disturbance; in 7, slight membrane and constitutional disturbance; and in 5, no membrane, but severe constitutional symptoms. In 72 there was a bacteriological examination made, and a positive result obtained in 69. In the remaining cases the symptoms were so urgent or death occurred so soon that no culture was taken.

The patients were treated with serum from the various horses as follows:

15 from Horse IV.	16 from Horse IX.
24 " " V.	18 " " X.
12 " " VIII.	8 " " XI.

The largest amount given was 50 c.c., the smallest 5 c.c. There were 17 laryngeal cases, 2 of urticaria, 21 of albuminuria, 15 of intubation, and 13 of sepsis (before treatment).

The length of time elapsed from the beginning of symptoms to the commencement of treatment is shown below:

1 day	3	6 days	3
2 days	15	7 "	2
3 "	13	8 "	0
4 "	13	9 "	1
5 "	3	Not stated	44

The total number of cases then is

Recoveries	550
Deaths	97
Total	647

giving a mortality of a shade under 15 per cent., which is remarkable when compared with the general mortality of this disease, never under 27 per cent. in Boston and 27.06 per cent. in 1894. But a study of the report shows that there are a number of cases that cannot be considered fair tests of the efficacy of the material, and these are here given in some detail.

1. Diphtheria, — well. Death in two weeks from multiple neuritis.
2. Laryngeal, — stenosis. Membrane lessened. Death in thirty hours.
3. The physician writes, "No test. Death in six hours."
4. Case of seven days' duration and severe constitutional symptoms before treatment was begun.
5. Of four days' duration, — and the same.
6. The same.
7. The same, — and severe otitis media.

8. The same.
9. The same, — died in six hours.
10. General tuberculosis the cause of death.
11. Death in less than twenty-four hours.
12. The same.
13. The same.
14. Death in less than twelve hours.
15. The same, — measles on entrance.
16. Six days' duration, — death in less than twenty-four hours.
17. Five days' duration, — death in less than twenty-four hours.
18. The same.
19. Nine days' duration, — death from exhaustion.
20. Death in less than twenty-four hours.
21. Death in less than fourteen hours.
22. Death in less than twelve hours, — measles on entrance.
23. Death in less than twelve hours.
24. Four days' duration, — death in less than twelve hours.
25. The same.
26. Death in less than twelve hours.
27. Death in less than twenty-four hours.
28. Death in less than eight hours.
29. Death in less than twenty-four hours.
30. Death in less than twenty hours.
31. Three days' duration, — sepsis on entrance.
32. Chronic endocarditis.
33. Four days' duration, — death in less than thirty-six hours from broncho-pneumonia.
34. Seven days' duration, — pneumonia.
35. Three days' duration, — sepsis.
36. Four days' duration, — sepsis.
37. Three days' duration, — sepsis and moribund.
38. Severe sepsis, — six days' duration, — heart failure.
39. Four days' duration, — severe sepsis, — heart failure.
40. Sepsis — death in less than twelve hours.
41. Severe sepsis, — four days' duration.
42. Severe sepsis.
43. Pneumonia.
44. Severe sepsis — scarlet fever.

45. Severe sepsis — broncho-pneumonia.
46. Sepsis, — six days' duration.
47. Sepsis, measles, — pulmonary tuberculosis the cause of death.
48. Sepsis.
49. Membrane cleared off, — died of convulsions two weeks afterward.

If, as would seem to be justifiable, such of these cases as died within twenty-four hours or of something else than diphtheria be excluded, 28 would be thrown out, and the mortality would be reduced to a little over 11 per cent. (69 divided by 619) ; on the other hand, if they are all neglected, so far as offering a fair test of the antitoxine is concerned, the mortality is reduced to 8 per cent. ($48 \div 599 = .0801$). In any case the results are extremely gratifying.

It has seemed to be interesting to work out the percentage of mortality in private practice, so far as it is shown by our returns. Of cases in which the antitoxine of your Board has been used out of the hospitals, there have been reported :

Recoveries	.	.	.	.	.	.	.	.	.	72
Deaths	.	.	.	.	.	.	.	.	.	7
Total	.	.	.	.	.	.	.	.	.	<hr/>79

which gives a mortality of 8 per cent.

But a study of the deaths shows at once that a number of them should be excluded in any consideration of the effects of the antitoxine. They are as follows :

1. Severe constitutional symptoms, — extensive membrane. Recovery from the diphtheria. Death two weeks afterwards from multiple neuritis.
2. Severe constitutional symptoms, — extensive membrane. Six days' duration. No apparent effect. Laryngeal, and death from stenosis in 30 hours.
3. Mild constitutional symptoms, — extensive membrane in throat and larynx. More than four days' duration. Second injection refused. "I do not consider this a fair test

of the antitoxine. Disease had invaded the larynx when seen; second injection refused, and death followed in 16 hours after the first injection."

4. Severe constitutional symptoms, — extensive and tough membrane. Four days' duration. Throat cleared. The physician notes, "The antitoxine cured the diphtheria, but death was the result of exhaustion."

5. Severe constitutional symptoms, — extensive membrane in nose, pharynx, and larynx. "Practically moribund." Death in less than 20 hours after the first injection.

6. Beginning laryngeal diphtheria. No membrane present in pharynx or in sight(?). No bacteriological test. Death in 14 hours.

7. Severe constitutional symptoms and extensive membrane. Four days' duration. "Died six hours after injection, from extensive disease in larynx. No test for antitoxine, as child was in a dying condition."

Opinions will differ as to how many of these deaths may fairly be excluded as tests of the efficacy of the antitoxine, but it cannot be denied that the summary is an exceedingly striking one.

There are still to be considered 101 cases in which the antitoxine was used for immunizing purposes, and these are shown on the accompanying chart.

From this it appears that the immunizing dose used was about 3 c.c. in 24 cases, about 5 c.c. in 70 cases, and 10 c.c. in 7 cases. That there were 23 cases of urticaria developed (all but two were extremely slight and disappeared in 24 hours or less). No cases of albuminuria were reported. Two cases of abscess formation are spoken of, but in each absorption occurred without opening. Two cases of generalized pain, and two localized at the point of injection are mentioned; but it is only reasonable to suppose that more than two of the latter really occurred. Nine slight rises of temperature after the injection are recorded and one of rigor. This last case, however, was that of a patient who had abscess formation at the site of the injection, fever, and generalized pain, and it is not fair to consider this due to the antitoxine. One case of the appearance of diphtheria after the immunizing dose is reported, but there were no

symptoms and the diagnosis was based upon a culture, — the bacilli disappearing in twenty-four hours.

Fifty-six of the immunized cases were directly exposed to infection, — fifteen of them in active care of diphtheria, — the remainder as children in the same house with the disease. I fail to find reported a single case of the appearance of the disease in the children of a family after immunization. Forty-five of the cases occurred in the Children's Hospital, and it is not known whether they were exposed to direct infection or not.

Finally I have worked out the relationship between the reported cases of urticaria and the horses from which the serum was obtained, as shown in the table below :

Horse.	No. patients treated.	Urticarias.	Percentage.
IV.	98	18	18.3
V.	174	28	16.09
VIII.	94	10	10.6
IX.	47	4	8.51
X.	155	33	21.29
XI.	90	13	14.44

It happens that the lowest percentages of urticarias have occurred with the serum from Horses VIII. and IX., and that the reports that are now in give the results from the serum from these horses that *mostly* had a strength of 1-100,-000; in other words, that could be used in a smaller dose. If this suggestion be borne out by further observation, it would seem to indicate that the urticarias are more the result of the bulk of serum used than the amount of antitoxine.

A comparison of the results herewith presented appears to indicate very emphatically, as has been the case in all similar observations, that the earlier the serum is used the more favorable the results. This certainly emphasizes the need for a more wide-spread distribution of the supply, if the best results are to be obtained.

The Board is to be congratulated upon the excellence of its plant for the production of this material; for the situation, from the hygienic point of view, and the plant for its completeness are, so far as I am aware, unsurpassed.

Respectfully submitted,

HAROLD C. ERNST.

GARBAGE AND REFUSE DISPOSAL.

There has been but little added to our experience during the last year in the development of methods for the public disposal of garbage and other refuse material. Under a contract between the city of Boston and the New England Construction Company, a garbage reduction plant was erected on Gibson street, Dorchester district, finished about January, 1895, and set in operation in February following. The contract stipulated that if the garbage plant became a nuisance to the neighborhood, said contract should be terminated. The plant was complained of, investigated, found to be a nuisance to the neighborhood, and the following action was taken by the Board of Health :

IN BOARD OF HEALTH,
BOSTON, February 18, 1895.

Whereas, In the opinion of this Board, the garbage plant of the New England Construction Company, situated on Gibson street, Dorchester, is the cause of a nuisance in the neighborhood, it is

Voted, That said company be notified of the existence of said nuisance and that said company be requested to appear at a hearing on said nuisance at the office of this Board on Wednesday, February 20, at 11 o'clock.

In accordance with the foregoing the following notice was served on the New England Construction Company :

HEALTH DEPARTMENT,
OLD COURT HOUSE, BOSTON,
February 18, 1895.

NEW ENGLAND CONSTRUCTION COMPANY :

GENTLEMEN: The Board of Health respectfully represents that its recent investigation of the garbage plant on Gibson street, in the Dorchester district, appears to show said plant to be the source of a considerable nuisance to the neighborhood. It therefore becomes the duty of the Board of Health to inform you of this fact and to notify you of a hearing concerning said nuisance to be held at this office, on Wednesday, February 20, at 11 o'clock, A.M.

You are hereby requested to take notice of the same.

Very respectfully,

(Signed)

C. E. DAVIS, JR.,
Secretary.

On the date named above, the representatives of the New England Construction Company appeared before the Board of Health and agreed to abate the nuisance complained of. Sufficient time having been given to the company to carry out its promises, a further examination of the premises was had without satisfactory results, and the following communication was sent to the Board of Aldermen :

HEALTH DEPARTMENT,
OLD COURT HOUSE, BOSTON, February 18, 1895.

HON. BOARD OF ALDERMEN :

GENTLEMEN: In accordance with a request from His Honor the Mayor the Board of Health has investigated an alleged nuisance in connection with the garbage plant on Gibson street, in the Dorchester district, and respectfully reports that it finds sufficient cause to warrant action under section 6 of the contract between the New England Construction Company and the city of Boston, which reads as follows :

“SECT. 6. If said first party shall neglect or refuse to receive, treat, or remove said garbage as aforesaid, or if the Board of Health of said city, after a notice to said first party and a hearing, shall decide that the treating said garbage, or the removing the same from the premises aforesaid, or the keeping said building or the premises connected therewith, or the bringing of the said garbage to said premises, is unhealthy or a nuisance to the neighborhood, this contract shall be thereby terminated unless said first party shall within thirty days from any decision of the said Board modify said treatment or abate said nuisance to the satisfaction of said Board of Health, and the said first party shall forthwith thereafter remove said building aforesaid, and cease to use the land above described.”

The Board of Health has this day notified the said Construction Company in accordance with the above section.

Respectfully,

THE BOARD OF HEALTH,

(Signed)

by SAMUEL H. DURGIN,

Chairman.

Formal action in accordance with the statutes relating to offensive trades was then taken as follows :

IN BOARD OF HEALTH,
BOSTON, March 21, 1895.

At a meeting of the Board of Health held this day, it was

Voted, That in accordance with section 84, chapter 80 of the Public Statutes, the assignment of the place on Gibson street, Dorchester district, to the New England Construction Company “for the erection and

use of a small experimental plant for the reduction of garbage" be and the same is hereby revoked, and the further exercise of such trade or employment is forbidden at said location.

The Mayor and City Council were notified of the above action as follows:

HEALTH DEPARTMENT,
OLD COURT HOUSE, BOSTON, March 21, 1895.

To His Honor the Mayor and City Council, City of Boston :

GENTLEMEN: In compliance with a request received from His Honor the Mayor, and subsequent requests from the Board of Aldermen and Common Council, the Board of Health respectfully reports that it has investigated the garbage plant on Gibson street, Dorchester district, and as a result has revoked the assignment given to the New England Construction Company on July 20, 1894, for the erection and use on said street "of a small experimental plant for the reduction of garbage."

The Board has placed the matter in the hands of the City Solicitor, who has prepared a bill of complaint in the name of this Board, to the Supreme Judicial Court, which will be filed at once.

Very respectfully,

(Signed) THE BOARD OF HEALTH,
by SAMUEL H. DURGIN,
Chairman.

The New England Construction Company thereupon appealed from the decision of the Board of Health revoking the assignment, and this appeal was heard before the Supreme Judicial Court in equity session, and the action of the Board of Health was sustained by the court.

The Board of Health still adheres to the belief which it has expressed in several of its annual reports, that all kitchen garbage can be successfully and economically disposed of in the kitchen where it is made, while it is fresh, and without care or expense to the city.

It is now seventeen months since it was shown that kitchen garbage could be carbonized and used as fuel in the kitchen stove without annoyance or expense to the family. During the past year hundreds of families have adopted this method of converting their kitchen wastes into fuel and found relief from the garbage bucket in the yard. The experience has now been ample to warrant the statement that every family can (and may reasonably be expected to) take care of its

kitchen waste with diminished care, annoyance, and expense.

If this material should be disposed of in the kitchen there would no longer be any danger of a public plant for the cremation or reduction of garbage in any residential district of the city ; there would be no more swill-carts in the streets ; there would be fifty thousand less swill-barrels in the back yards, and a saving of two hundred thousand dollars annually to our city treasury.

The Board would respectfully suggest that all of the other wastes and rubbish which are gathered by the city carts (excepting clean ashes) and which now go to the dump or down the harbor on the scows, can be reduced by heat to clean material which can be used for various purposes with a commercial value. The Board believes that eight or ten crematories might be constructed, at moderate cost, in different business sections of the city, giving short hauls for the teams, and be maintained at a trifling net cost to the city. In this way all decomposing organic matter would be readily converted to clean ash, and all old junk and rag pickings be placed under control, disinfected and made safe for their various uses. The present methods in use for the disposal of our kitchen waste, and also the general and mixed wastes which are gathered about the city, are open to serious objection and are frequently complained of. We make a sharp distinction between the so-called kitchen garbage which is now gathered separately by the city and sold to farmers as food for pigs, and all other mixed rubbish, garbage, and wastes which are gathered by the city carts and used for making land or carried down the harbor on the scows. The first material decomposes rapidly, is delayed in its movements in the back yards, alley-ways, streets, and at its final lodging-place, and is not a good food for making meat. It constitutes one of the most formidable nuisances in the city, and this should be carefully considered in any public plan, which merely contemplates an additional nuisance and cost to the city for a tardy and final destruction of such material. The second material makes the most unhealthful land for business or dwelling purposes, or pollutes the harbor and shores where it occasionally lodges in considerable quanti-

ties. We believe that the vast increase in the amount of this waste matter has made the present methods of handling and disposal too cumbersome, costly, and unhealthful, and that it constitutes a subject worthy of the best attention of the City Council.

STONY BROOK.

Since the overflow of the Stony brook in 1886, which created great damage between Parker street, the old Roxbury canal, Massachusetts avenue, and Vernon street, the attention of the Board of Health has been repeatedly called to the unhealthful conditions of this locality, which has a low grade and is very imperfectly sewered. Many of the buildings have been erected without suitable foundations and with basements often on a level with, and in some instances even below, the sewer bottoms. Many of the sewers are small, old, and worn out, and either inadequate for the demand upon them or not of sufficient depth to be of much service. The remedy will be expensive and, as we believe, can only be found in raising the grade of the territory or in the reconstruction of the sewers.

The Board of Health would respectfully recommend that this territory be especially examined by an engineer to ascertain the expense of the changes and the method necessary for a complete remedy for the present evils.

OLD COURT HOUSE.

The following communication was sent to the Superintendent of Public Buildings :

[COPY.]

HEALTH DEPARTMENT,
OLD COURT HOUSE, BOSTON, June 20, 1895.

COL. F. B. BOGAN, *Superintendent Public Buildings* :

DEAR SIR: The Board of Health desires to call your attention to the foul-smelling and unhealthful condition of portions of this building, the physical condition of which has been recently and carefully inspected by this department, and found to be as follows :

This building has been in use for many years for prison and criminal court purposes, and many parts of it, notably the basement floors, are thoroughly permeated with filth and foul odor. The basement is dark and unventilated, and in it there are over forty cells and disused water-

closets, each having connection with the old earthen sewer which runs under the entire length of the building and is about thirteen inches below the surface; these water-closets are old, corroded, and offensive. In the corridors of the basement are many surface cesspools, and these are at all times liable to become unsealed by evaporation. There are also rooms in the basement which are uncleanly and foul smelling, used as waiting rooms by the Water Department laborers. . . .

This Board would respectfully recommend that the water-closets, cesspools, cell walls, floor pavements, and all foul-smelling earth and other material be removed, the sewer put in good condition, and the whole basement made clean, light, and healthful for occupation and for the relief of the other occupants of the building.

Very respectfully,

THE BOARD OF HEALTH,

by S. H. DURGIN,

Chairman.

The bad sanitary condition complained of at that time still continues, and is a menace to the health of every person in the building.

PRIVATE DRAINS.

The acceptance by the City Council of the act of the Legislature of 1893, relating to the maintenance of private drains, enables the Board of Health to compel those who use such drains to keep them in proper repair.

Prior to the acceptance of this act, in December last, it has frequently happened when such a drain leaked or was otherwise out of repair that one or more obdurate owners having an equal responsibility, but whose estates were not flooded or otherwise directly affected by such want of repair, refused to combine with the others interested, and the result was that a few owners were compelled to bear the whole burden, in which all interested should share alike. The acceptance of the Legislative act obviates this difficulty.

AN ACT RELATING TO THE REPAIR OF PRIVATE DRAINS IN STREETS OR WAYS.

CHAPTER 312.

Be it enacted, etc., as follows :

SECTION 1. Every owner of an estate which drains into a private drain in a public or private street or way, who shall neglect to put such drain in good repair and condition for ten days after being notified by the Board of Health of the city or town that the drain is out of repair and condition, shall be liable to a fine not exceeding twenty dollars for

every day that such neglect continues after the expiration of said ten days.

SECT. 2. This act shall take effect in any city when accepted by the City Council thereof, and in any town when accepted by a majority vote of the voters of such town present and voting at a meeting of said town duly called for that purpose.

Approved May 4, 1893.

HOUSE TO HOUSE INSPECTION.

The work of house to house inspection was continued as heretofore with the following results :

Section 1.

Twenty-four wooden houses situated in Ward 1, about grade 40, in fair condition, occupied by a class of people in fair circumstances, numbering 183.

Number of houses in the street	24
“ examined	24
“ in which bad odors were perceptible	2
“ in which defective drains were found	6
“ in which a lack of traps was found	2
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	1
“ using steam-heat	4
“ using furnaces	1
“ using furnaces without proper air-supply	1
“ having water-closets	24
“ old style and faulty water-closets	1
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain	19
“ having offensive cesspools	2

Section 2.

Forty-seven wooden houses situated in Ward 3, about grade 30, in poor condition, occupied by a class of people in poor circumstances, numbering 405.

Number of houses in the street	47
“ examined	47
“ in which bad odors were perceptible	18

Number in which defective drains were found . . .	19
“ in which a lack of traps was found . . .	16
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	0
“ using steam-heat	0
“ using furnaces	3
“ using furnaces without proper air-supply . . .	0
“ having water-closets	47
“ old style and faulty water-closets	0
“ having offensive water-closets	7
“ having ventilation to soil-pipe or drain . . .	14
“ having offensive cesspools	1

Section 3.

Sixteen brick houses situated in Ward 6, about grade 25, in poor condition, occupied by a class of people in poor circumstances, numbering 212.

Number of houses in the street	16
“ examined	16
“ in which bad odors were perceptible	13
“ in which defective drains were found	9
“ in which a lack of traps was found	6
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	1
“ using steam-heat	0
“ using furnaces	2
“ using furnaces without proper air-supply . . .	0
“ having water-closets	16
“ old style and faulty water-closets	6
“ having offensive water-closets	6
“ having ventilation to soil-pipe or drain . . .	8
“ having offensive cesspools	0

Section 4.

Thirty-eight brick and six wooden houses, situated in Ward 7, about grade 25, in poor condition, occupied by a class of people in poor circumstances, numbering 775.

Number of houses in the street	44
“ examined	44
“ in which bad odors were perceptible . .	23
“ in which defective drains were found . .	21
“ in which a lack of traps was found . .	9
“ having offensive vaults	0
“ having unclean yards	6
“ having damp or unclean cellars	11
“ using steam-heat	2
“ using furnaces	1
“ using furnaces without proper air-supply .	0
“ having water-closets	44
“ old style and faulty water-closets . .	4
“ having offensive water-closets	9
“ having ventilation to soil-pipe or drain .	29
“ having offensive cesspools	1

Section 5.

Nineteen brick and six wooden houses situated in Ward 9, about grade 65, in fair condition, occupied by a class of people in ordinary circumstances, numbering 188.

Number of houses in the street	25
“ examined	25
“ in which bad odors were perceptible . .	9
“ in which defective drains were found . .	7
“ in which a lack of traps was found . .	4
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	1
“ using steam-heat	0
“ using furnaces	5
“ using furnaces without proper air-supply .	2
“ having water-closets	25
“ old style and faulty water-closets . .	10
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain .	6
“ having offensive cesspools	8

Section 6.

Twenty-two brick houses situated in Ward 11, about grade 18, in poor condition, occupied by a class of people in fair circumstances, numbering 155.

Number of houses in the street	22
“ examined	22
“ in which bad odors were perceptible	11
“ in which defective drains were found	8
“ in which a lack of traps was found	5
“ having offensive vaults	0
“ having unclean yards	1
“ having damp or unclean cellars	2
“ using steam-heat	0
“ using furnaces	1
“ using furnaces without proper air-supply	1
“ having water-closets	22
“ old style and faulty water-closets	10
“ having offensive water-closets	1
“ having ventilation to soil-pipe or drain	2
“ having offensive cesspools	1

Section 7.

Twenty-three brick houses situated in Ward 11, about grade 17, in good condition, occupied by a class of people in well-to-do circumstances, numbering 219.

Number of houses in the street	23
“ examined	23
“ in which bad odors were perceptible	3
“ in which defective drains were found	3
“ in which a lack of traps was found	2
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	0
“ using steam-heat	1
“ using furnaces	20
“ using furnaces without proper air-supply	0
“ having water-closets	23

Number old style and faulty water-closets	5
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain	14
“ having offensive cesspools	0

Section 8.

Twenty-two wooden houses situated in Ward 22, about grade 40, in fair condition, occupied by a class of people in poor circumstances, number 210.

Number of houses in the block	22
“ examined	21
“ in which bad odors were perceptible	3
“ in which defective drains were found	6
“ in which a lack of traps was found	2
“ having offensive vaults	0
“ having unclean yards	3
“ having damp or unclean cellars	0
“ using steam-heat	0
“ using furnaces	3
“ using furnaces without proper air-supply	1
“ having water-closets	21
“ old style and faulty water-closets	3
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain	13
“ having offensive cesspools	0

Section 9.

Twenty-five wooden and 9 brick houses situated in Ward 19, about grade 20, in poor condition, occupied by a class of people in ordinary circumstances, numbering 247.

Number of houses in the block	34
“ examined	34
“ in which bad odors were perceptible	8
“ in which defective drains were found	14
“ in which a lack of traps was found	10
“ having offensive vaults	1
“ having unclean yards	0

Number having damp or unclean cellars	2
“ using steam-heat	0
“ using furnaces	7
“ using furnaces without proper air-supply	3
“ having water-closets	34
“ old style and faulty water-closets	5
“ having offensive water-closets	5
“ having ventilation to soil-pipe or drain	14
“ having offensive cesspools	0

Section 10.

Twenty-eight wooden and 3 brick houses situated in Ward 15, about grade 40, in poor circumstances, occupied by a class of people in ordinary circumstances, numbering 220.

Number of houses in the street	31
“ examined	31
“ in which bad odors were perceptible	17
“ in which defective drains were found	15
“ in which a lack of traps was found	10
“ having offensive vaults	0
“ having unclean yards	1
“ having damp or unclean cellars	0
“ using steam-heat	0
“ using furnaces	8
“ using furnaces without proper air-supply	3
“ having water-closets	31
“ old style and faulty water-closets	9
“ having offensive water-closets	5
“ having ventilation to soil-pipe or drain	3
“ having offensive cesspools	0

Section 11.

Twenty-six wooden and 13 brick houses situated in Ward 14, about grade 40, in fair condition, occupied by a class of people in good circumstances, numbering 316.

Number of houses in the street	39
“ examined	39
“ in which bad odors were perceptible	5

Number in which defective drains were found . . .	7
“ in which a lack of traps was found . . .	10
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	1
“ using steam-heat	0
“ using furnaces	19
“ using furnaces without proper air-supply . . .	3
“ having water-closets	39
“ old style and faulty water-closets	14
“ having offensive water-closets	1
“ having ventilation to soil-pipe or drain . . .	20
“ having offensive cesspools	0

Section 12.

Nineteen wooden and 2 brick and wooden houses situated in Ward 24, about grade 100, in good condition, occupied by a class of people in well-to-do circumstances, numbering 117.

Number of houses in the street	21
“ examined	21
“ in which bad odors were perceptible	1
“ in which defective drains were found	3
“ in which a lack of traps was found	0
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	0
“ using steam-heat	1
“ using furnaces	20
“ using furnaces without proper air-supply . . .	0
“ having water-closets	21
“ old style and faulty water-closets	0
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain . . .	20
“ having offensive cesspools	0

Section 13.

Seventeen wooden houses situated in Ward 25, about grade 20, in good condition, occupied by a class of people in well-to-do circumstances, numbering 79.

Number of houses in the street	17
“ examined	17
“ in which bad odors were perceptible	3
“ in which defective drains were found	4
“ in which a lack of traps was found	1
“ having offensive vaults	0
“ having unclean yards	0
“ having damp or unclean cellars	0
“ using steam-heat	0
“ using furnaces	17
“ using furnaces without proper air-supply	2
“ having water-closets	17
“ old style and faulty water-closets	2
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain	16
“ having offensive cesspools	1

Recapitulation.

Whole number examined	366
Bad odors found in	116
Defective drains found in	122
Lack of traps found in	77
Offensive vaults found in	1
Damp or unclean yards	11
Damp or unclean cellars	19
Using furnaces	107
Furnaces without proper air-supply	14
Using steam-heat or hot water	8
Water-closets found in	364
Old style or faulty water-closets found in	64
Offensive water-closets found in	34
Ventilation to soil-pipe or drain found in	178
Offensive cesspools found in	14
Percentage of defective drains	33.33
Percentage of defective trapping	21.04
Percentage of unventilated drains	51.37

PRIVY VAULTS.

In 1885 the Legislature enacted a law, which in effect prohibited the having of privy vaults connected with buildings situated on streets in which are located public sewers. Since that time there have been discontinued by order of the Board 7,857 such vaults.

The discontinuance of these vaults, together with those which have been voluntarily discontinued has so reduced the number that it may almost be said that they are among the things of the past except in localities where water-closets are not practicable.

VAULTS AND CESSPOOLS CLEANED DURING 1895.

Charlestown . . . 16	Boston proper . . . 45
South Boston . . . 30	Dorchester . . . 225
W. Rox. and Brighton, 142	East Boston . . . 63
Roxbury . . . 85	
	Total . . . 606

NUISANCES ABATED.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
House drains repaired .	147	213	175	217	216	227	222	174	211	304	303	208	2,617
Vaults cleaned and repaired	8	32	15	156	72	54	64	53	42	21	31	20	568
Traps supplied	37	69	54	54	58	67	78	71	64	93	103	51	799
Yards cleaned	49	37	230	349	154	114	108	74	74	85	91	33	1,898
Cellars cleaned	92	110	132	217	141	118	113	74	98	89	141	70	1,395
Cess-pools cleaned	9	5	16	119	51	41	47	27	22	38	27	4	406
Water-closets cleaned and repaired	79	184	95	120	109	85	83	85	96	147	153	98	1,334
Number of places from which fowls were removed	1	3	6	8	11	15	12	4	2	8	8	2	80
Supply-pipes repaired .	7	28	12	13	5	5	11	5	10	4	9	3	112
Privies cleaned and repaired . . . . .	..	9	3	3	1	11	2	2	..	..	..	1	32
General want of cleanliness and repair	14	34	32	45	49	21	17	3	16	17	21	16	285
Exposed manure	3	4	6	2	8	8	19	6	5	3	6	3	73
Passageways cleaned . .	7	12	38	98	98	75	44	27	35	24	31	25	514
Sheds cleaned	4	8	12	8	7	24	5	8	4	10	9	2	101
Tenements whitewashed .	2	..	92	522	436	68	200	1	5	2	2	2	1,332
Stables cleaned	4	2	11	6	6	15	9	3	5	7	6	5	79
Sundry nuisances	10	18	6	9	9	23	19	9	13	17	9	7	149
Rain-conductors repaired	3	1	2	3	3	7	5	7	9	13	8	1	62
Roofs repaired . . . . .	..	2	..	2	3	5	4	2	1	5	4	3	31
Receptacles provided for garbage	1	7	8	5	1	2	1	5	3	3	1	2	39
Places from which swine were removed . . . . .	..	1	..	..	2	3	4	2	2	..	3	2	19
Stagnant water removed from vacant lots . . . . .	..	..	1	28	17	12	6	10	4	10	17	4	109
Vacant lots cleaned . . . .	..	4	6	12	8	17	13	6	3	10	4	1	84
Houses cleaned of dead rats . . . . .	..	1	1	1	5	2	..	1	..	..	1	1	13
Overcrowded rooms . . .	4	14	5	6	1	..	1	1	3	1	..	4	40
Places from which goats were removed . . . . .	..	..	..	1	4	1	2	..	..	..	..	..	8
Total	481	798	958	2,004	1,475	1,020	1,089	660	727	911	988	568	11,679

In addition to the foregoing there have been 1,018 complaints investigated, where action by the Board was found unnecessary.

DISINFECTION.

After Cases of	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Diphtheria	364	265	211	166	168	237	282	211	269	328	454	495	3,450
Scarlet Fever	212	188	166	172	111	107	96	78	86	95	71	104	1,486
Phthisis	2	..	1	..	..	1	..	..	..	..	1	1	6
Measles . . . . .	..	..	6	4	1	..	..	..	..	..	..	..	11
Infected carriages . . .	2	5	1	1	1	2	1	1	..	..	..	2	18
Infected schools . . . .	..	..	..	..	..	..	..	..	2	3	5	7	17
Infected lots of clothing	4	2	1	3	5	1	2	7	3	2	2	8	35
Infected lots of books .	1	3	1	1	2	3	3	6	1	5	4	7	37
Glanders . . . . .	..	3	4	..	1	2	1	1	6	5	5	5	33
Miscellaneous . . . . .	..	..	..	..	..	..	..	..	..	..	1	1	2
Total	585	466	391	347	289	353	385	304	367	438	545	625	5,095
Number of rooms . . .	1,070	797	747	749	626	730	794	654	803	829	1,123	1,233	10,155

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Streets					14	107	98	41	75	9	2	..	341
Places					52	115	157	62	141	101	7	..	635
Courts					24	49	61	89	103	21	19	..	366
Alleys		1		3	211	401	309	283	743	317	81	2	2,351
Yards	18		4	15	1,091	1,568	1,986	1,721	2,717	814	173	1	10,098
Vaults	17	21	11	27	141	119	111	93	534	233	11	4	1,822
Cellars	81	11	18	9	759	523	1,233	1,014	2,419	784	121	9	6,931
Cesspools . .	9	7	35	3	697	842	917	673	3,176	502	187	6	7,054
Gutters					309	627	741	519	2,490	83	7	..	4,776
Water-closets	19		29	19	481	718	573	697	1,704	924	297	39	5,600
Passageways .	8				317	392	809	731	936	278	119	1	3,586
Urinals	7				19	21	34	39	63	21	4	11	219
Vacant lots . .					3	9	22	81	32	4	2	..	103
Filthy sheds .	6	16	13	21	961	893	681	702	1,205	768	91	21	5,378
Filthy rooms .	237	251	287	391	82	77	199	210	182	124	143	98	2,281
Sinks	61	91	72	34	361	905	1,161	974	1,473	413	801	101	5,947
Total	403	398	469	522	5,522	7,361	9,087	7,879	17,998	5,396	1,565	293	56,888

Material used: Bichloride of mercury, 1,575 pounds; chloride of lime, 36,875 pounds; sulphur, 44,899 pounds; copperas, 3,150 pounds; and muriatic acid in mixing, 12 carboys.

TENEMENT AND LODGING HOUSES.

The statute law requiring all tenement-houses to be examined twice in each year has been complied with. In some cases, where the houses might more properly be termed apartment houses, this duty has been of a perfunctory character, and only the examination required by law has been had. Of the poorer class of houses, however, a large number require and have received weekly and in some instances almost daily visits from the inspectors.

Frequent visits have been made by day and night to the various cheap lodging-houses throughout the city, and the

proprietors have been required to cleanse the rooms or bedding as the circumstances called for.

Under the law of 1894, requiring this department to certify to the Police Department regarding the ventilation and sanitary accommodations of such houses as charge twenty-five cents or less per night, twenty-five houses have been certified as having the required qualifications, and two have been refused such certificate.

One drawback to the proper sanitation of these houses is the disinclination of the patrons to avail themselves of such ventilation as is provided, as they much prefer a heated atmosphere, however foul, to fresh air of a lower temperature.

A proprietor of one of these lodging-houses has instituted a reform, which although very unpopular among his customers could be imitated by others in the business with beneficial results viz. : that of requiring every lodger to take a bath or going elsewhere for accommodations.

The following applications for licenses to maintain lodging-houses have been approved by the Board of Health :

- 24 Pitts street, for 28 persons.
- 16 Cross street, for 24 persons.
- 1324-26A Tremont street, for 40 persons.
- 1½ Lewis street, for 93 persons.
- 238 Commercial street, for 50 persons.
- 1093 Washington street, for 122 persons.
- 1051-53 Washington street, for 130 persons.
- 42 Eastern avenue, for 100 persons.
- 14 & 18 Eliot street, for 90 persons.
- 164 Commercial street, for 65 persons.
- 2 Lewis street, for 100 persons.
- 338-40 Commercial street, for 22 persons.
- 13½ Howard street, for 50 persons.
- 181½ Friend street, for 20 persons.
- 1025 Washington street, for 102 persons.
- 17 Kneeland street, for 58 persons.
- 49 Fleet street, for 30 persons.
- 3 & 7 Pitts and 9 Green streets, for 100 persons.
- 234 Commercial street, for 45 persons.

238 Commercial street, for 50 persons.
3 Eliot street, for 30 persons.
57 Fleet street, for 30 persons.
45 & 47 Clark street, for 30 persons.
27 & 29 Endicott street, for 25 persons.
79A Harrison avenue, for 24 persons.

HOUSES VACATED.

The number of houses which the Board has ordered vacated during the year because of their unsanitary condition is one hundred and twelve; of this number, however, a very large per cent. were put in a satisfactory condition before the expiration of the time allowed the occupants to quit the premises, and in such cases the orders were not enforced.

CEMETERIES.

For the maintenance of the seventeen cemeteries under the care of the Board of Health there has been expended during the fiscal year \$4,896.15, comparatively none of which has been for extraordinary repairs.

It is a matter worthy of note that the income from Evergreen Cemetery at Brighton has been \$1,508.37, making the total return for the three years since the expenditure of \$5,000 for the improvement of the grounds, \$4,228.87.

There were interred at the Central Ground, on Boston Common, such human remains as were found in making excavations for the subway under the Boylston-street mall, which, prior to 1836, was part of the Central burial-ground on Boston Common. The plot wherein the reinterments took place is to be marked by a tablet suitably inscribed.

It is estimated that the bones of 910 persons were reinterred. The work of removal and reinterment was satisfactorily performed under the direction of ex-Mayor Samuel A. Green.

The following is a list of interments made during the year 1895 in the cemeteries :

Calvary	1,937	*Phipps-st. Ground .	90
Mt. Hope	1,813	*Central Ground .	39
Forest Hills . . .	881	*Dorchester, North .	24
Woodlawn	962	Union Ground .	52
Mt. Auburn	515	Mt. Benedict . . .	1,226
Cedar Grove . . .	368	*Evergreen	79
*Bennington-st., E.B.	160	Bunker Hill, Roman	
St. Augustine . . .	73	Catholic	35
*Dorchester South .	12	*Granary Ground .	3
Ohabei Shalom . .	20	*South Ground .	0
Codman	24	Dorchester, Roman	
Gethsemane	36	Catholic	255
Walk Hill	1	*Westerley	2
*Bunker Hill, Protes-		*King's Chapel	
tant	3	Ground	0
*Copp's Hill . . .	3		

BATH-HOUSES.

The eighteen public bath-houses were open during June, July, August, and September as usual, the expense of their maintenance being \$16,000, this sum including the outlay for the building of one new bath-house, and for repairs of the old ones. The following table shows the number of bathers of each sex during the season. The falling off as compared with the number of bathers during the previous season is doubtless accounted for by the cooler weather.

For Men and Boys.

	1894.	1895.
West Boston bridge, foot of		
Cambridge street	65,260	43,925
Craigie's bridge, foot of Leverett		
street	107,680	72,400
Charles-river bridge, near Cause-		
way street	74,064	47,101
East Boston, Sectional Dock,		
Border street	54,474	43,442
Mt. Washington-avenue bridge,		
near Federal street	63,911	46,880

* In charge of the Board of Health.

	1894.	1895.
South Boston, foot of L street,		
Dorchester bay	283,465	181,658
Dover street, at south pier . .	44,585	39,257
East Boston, Maverick street . .	52,097	36,567
Chelsea bridge, Charlestown . .	45,501	41,508
Malden bridge	56,347	26,193
Commercial point	13,560	10,848

For Women and Girls.

Charles-river bridge, near Cause-		
way street	64,018	29,299
East Boston, Sectional Dock,		
Border street	34,611	24,922
South Boston, foot of M street,	59,038	51,185
Dover street, at South pier . .	21,791	22,610
Commercial point, Dorchester . .	20,139	26,745
Chelsea bridge, Charlestown . .	16,225	17,945
Malden bridge, Charlestown . .	5,909	4,340
	<hr/>	<hr/>
Total men and boys	860,944	589,779
Total women and girls	221,731	177,046
	<hr/>	<hr/>
Total of both sexes	1,082,675	766,825
	<hr/>	<hr/>

The subject of maintaining bath-houses all the year round was the subject of a special recommendation by His Honor the Mayor in his inaugural address to the City Council, and a special commission has since been appointed by him to consider the subject, and make such recommendations with a view to establishing such accommodations as may be deemed expedient. The supplying of public bathing facilities during the winter as well as during the summer months has the cordial approval of the Board of Health as being in the line of promoting the public health.

UNDERTAKERS.

Appointed annually. (Pub. Stat. 1890, chap. 210, sect. 1.)

LIST OF UNDERTAKERS, CITY OF BOSTON.

Abrams, Barnett, 4 Williams-street terrace .	Ward 19
Alexander, Alexis, 42 Cedar street, Rox. .	" 21
Avdon, Michael, 8 Morton street . . .	" 7
Badaracco, Andrew A., 11 No. Bennet street .	" 6
Balfe, Thomas J., 258 Broadway . . .	" 13
Banks, Walden, 170 Cambridge street . .	" 9
Barry, Michael, 371 Harrison avenue . .	" 16
Barry, David, 114 and 116 Commercial street .	" 24
Belgard, Philip, 15 Arnold street . . .	" 19
Bennison, Charles E., Gladstone street . .	" 1
Brady, Patrick J., 177 Green street . . .	" 23
Briggs, Frederick L., 20 Howard street . .	" 10
Brown, Edwin G., 232 Meridian street . .	" 2
Brown, Charles R., 584 Dudley street . .	" 20
Brown, Julia A. F., 14 Bennington street .	" 1
Bryant, John, 15 Austin street . . .	" 5
Bryant, John E., 15 Austin street . . .	" 5
Bryant, T. Weston, 15 Austin street . . .	" 5
Buckley, James A., 80 Endicott street . .	" 7
Burke, John B., 60 Leverett street . . .	" 8
Burke, Edmond C., opp. Jamaica Plain station	" 23
Callahan, Timothy F., 39 Main street . .	" 5
Caro, Solomon M., 157 Kneeland street . .	" 12
Cassidy, William J., 120 Harrison avenue .	" 12
Chester, Charles E., Trinity church . . .	" 11
Clark, William C., Long Island . . .	" 2
Cleary, J. P., 5 Pyncheon street . . .	" 21
Cobb, Charles W., 99 Main street . . .	" 5
Colbert, Charles E., 144 Harrison avenue .	" 12
Cole, George S., 306 Broadway . . .	" 13
Cole, Harry, H., 9 Hancock street . . .	" 24
Cole, Jabez B., 124 Dorchester street . .	" 14
Connell, Austin H., 815 Albany street . .	" 20
Costello, W. P., 129 Shawmut avenue . .	" 16
Crane, F. E., 780C Tremont street. . .	" 18

Crane, Horace R., 25 Walnut street, and 1859 Dorchester avenue	Ward 24
Crogran, James P., 87 Chelsea street	" 5
Crosby, Elizabeth A., 10 Warren street	" 20
Crosby, Frederick J., 10 Warren street	" 20
Dacey, C. M., 64 Devens street, Ch'n District	" 5
Dolan, James W., 1380 Dorchester avenue	" 24
Donovan, Patrick J., 95 E. Lenox street	" 19
Doolin, John, 211 Third street and 245 Dorches- ter street	" 14
Doyle, Thomas, 2278 Washington street	" 21
Eastman, Alman L., 251 Tremont street	" 12
Fallon, James P., 145 Dudley street	" 21
Fallon, John D., 736 Centre street	" 23
Farrell, Michael A., 1336 Tremont street	" 19
Feeley, Thomas, 128 Freeport street	" 24
Feeney, John, 364 Hanover street	" 6
Field, George V., 214 Dorchester street	" 15
Gleason, R., 345 Washington street	" 24
Glidden, Charles S., 482 Dudley street	" 20
Gleason, E. F., 345 Washington street	" 24
Guggenheim, Joseph, 111 W. Brookline street	" 17
Harrigan, Daniel P., 365 Warren street	" 21
Haynes, James, 8 Ferdinand street	" 11
Healy, Oliver F., 98 Kneeland street	" 12
Heintz, John, 1124 Tremont street	" 19
Hill, George, South street	" 23
Hogue, Alphonse, 8 Dearborn street	" 20
Jacobs, Louis, 40 Porter street	" 16
Johnson, George, 251 Tremont street	" 12
Jones, Lewis L., 50 La Grange street	" 10
Keating, Thomas J., 322 Bunker Hill street	" 4
Kelly, Arsenus J., 11 Meridian street	" 2
Kelly, Michael J., 37 Maverick square	" 2
Kennedy, P. T., 11 N. Bennet street	" 6
Lane, Thomas J., 120 Havre street	" 2
Langone, Joseph A., 84 Endicott street	" 7
Lavery, Frank W., 54 A street	" 13
Lavery, John W., 54 A street	" 13
Leary, Lewis W., 146 Broadway	" 13

Leonard, Thomas F., Tremont street, corner Chester park	Ward 18
Levine, Michael, 12 Morton street	" 7
Lewis, Fred H., 132 Charles street	" 10
Linnehan, C. P., 98 Kneeland street	" 12
Lippa, William, 48 Salem street	" 7
Lobsenz, Nathan, 8 Oneida street	" 16
Maloney, Frank S., 123 Maverick street	" 2
Mann, Lewis A., 145 Dudley street	" 21
Marsh, W. W., 475 Cambridge street	" 25
McCaffrey, John, 75 Albany street	" 12
McCaffrey, Christopher P., 75 Albany street	" 12
McCarthy, Marcus B., 119½ Pleasant street	" 11
McCartney, Timothy, 328 Bunker Hill street	" 4
McCugh, Hugh, Roslindale	" 23
McMackin, Bernard, 129 Endicott street	" 7
Mitchell, M. J., 324 Bunker Hill street	" 4
Morris, Jerome S., 165 London street	" 2
Morris, John, London street, cor. Porter street,	" 2
Muldoon, Joseph L., Market street	" 25
Mullen, James, 84 Charlestown street	" 7
Mullen, M. J., 650 Broadway	" 14
Mullen, Patrick H., 650 Broadway	" 14
Murphy, Michael J., 428 Hanover street	" 6
Murray, E. A., 29 Thacher street	" 7
O'Donnell, James F., 204 Broadway	" 13
Orcutt, E. B., 395 Cambridge street	" 25
Peak, John H., 1374 Washington street	" 17
Peak, John H., Jr., 1374 Washington street	" 17
Perry, Charles L., 366 Cambridge street	" 25
Rafferty, Patrick H., 4 Travers street	" 7
Rafferty, Thomas E., 1104 Tremont street	" 19
Reade, John, 187 Main street	" 5
Regan, Martin, 1032 Tremont street	" 19
Ring, Timothy F., 205 D street	" 13
Roach, Edward E., 191 Pynchon street	" 21
Roeder, John R., Henshaw street	" 25
Smith, Benjamin F., 251 Tremont street	" 12
Smith, Samuel G., 106 Dorchester street	" 14
Sprague, John W., 120 Meridian street	" 2

Sullivan, J. F., 358 Market street	Ward 25
Sullivan, Samuel J., 545 Harrison avenue . .	" 17
Sullivan, T. J., 258 Broadway	" 13
Stockman, Charles A., 79A Warren street . .	" 21
Summerville, Joseph J., 3149 Washington street,	" 23
Thorpe, J. J., Dorchester street, near Gold st.,	" 15
Tinkham, Charles F., 20 Howard street . .	" 10
Tinkham, Jeremiah, 20 Howard street . .	" 10
Vinal, Frederick, Deer Island	" 2
Washburn, Cheney D., Commonwealth avenue .	" 11
Waterman, Frank S., 2326 Washington street .	" 21
Waterman, George H., 2326 Washington street,	" 21
Watson, Bernard L., 7 Auburn street . .	" 19
Willard, George A., 110 Dorchester street .	" 14
Williams, N. M., 1386 Washington street . .	" 17
Williamson, Joseph, 29 Vernon street . .	" 19
Wittenberg, Solomon, 112 Richmond street .	" 6

EXAMINATION OF PLUMBERS.

For the year ending January 31, 1896, the Examining Board held 44 meetings and examined 258 candidates for plumbers' licenses; 93 were for master plumbers' licenses, and 50, or 52 per cent., passed the examination and were licensed; 165 were examined for journeyman plumbers' licenses, and 106, or 64 per cent. passed the oral examination and were notified to report at the shop for a practical test. Of the 106 candidates who passed the oral examinations, 77 passed successful examinations in the shop and were given licenses.

LYING-IN HOSPITALS.

During the year 423 confinements have taken place in the licensed hospitals, and no deaths have been reported.

These hospitals have been regularly visited and inspected by the Medical Inspector.

STABLES.

There have been 248 applications for the occupancy of stables filed with this Board. Of this number 104 have required public hearings.

The action taken is as follows :

Granted	.	.	.	.	.	.	.	.	198
Refused	.	.	.	.	.	.	.	.	37
Applications withdrawn	.	.	.	.	.	.	.	.	7
Awaiting action	.	.	.	.	.	.	.	.	6
Total	.	.	.	.	.	.	.	.	<hr/>248

PROSECUTIONS.

During the year there have been 30 prosecutions for violations of various health laws. In these cases there were 25 convictions, 2 acquittals, 2 were nol-prossed, and 1 is still pending.

Of the convictions perhaps the most important was that of a physician for failing to report a case of contagious disease which he had been called to attend. In this case a fine of fifty dollars was imposed in the lower court, and after an appeal and trial before a jury, the judgment of the lower court was affirmed and the fine increased to one hundred dollars.

APPOINTMENTS.

Edwin F. Pilsbury was appointed by the Mayor and confirmed by the Board of Aldermen as a member of the Board of Health for the term of three years, from the first of May, 1895.

An act to revise the city charter was passed by the Legislature in June, placing the department of inspection of milk and vinegar, and the department of inspection of provisions, in charge of the Board of Health. In accordance with the provisions of said act, Dr. Charles Harrington was appointed Health Inspector for the inspection of milk and vinegar and Mr. John Grouse was appointed Health Inspector for the inspection of provisions. These appointments took effect on the first of July.

On the 5th of December the resignation of Dr. Francis A. Lane as port physician was accepted.

Dr. David D. Brough, assistant port physician, was appointed port physician in place of Dr. Lane, resigned, which appointment took effect on December 6.

On the 7th of December Dr. B. H. Metcalf was appointed assistant port physician in place of Dr. Brough, promoted.

On the first Monday in May the Board organized by the choice of Samuel H. Durgin, M.D., as chairman, and Chas. E. Davis, Jr., as secretary.

FINANCIAL STATEMENT.

EXPENSES FOR TWELVE MONTHS, ENDING JANUARY 31,
1896.

Board of Health (salaries)	\$8,716 67	
Clerk-hire	10,178 12	
Messenger	558 21	
Inspectors of nuisances	27,156 50	
Veterinary inspector at abattoir,	3,542 29	
Medical inspectors	5,811 75	
Superintendent of pedlers	1,196 52	
Maintenance of hospital	1,816 93	
Contagious diseases (other than small-pox)	17,705 04	
Disinfection	12,971 94	
Abatement of nuisances	394 14	
Epidemic hospital	2,820 52	
Care of public urinals	4,504 83	
Care of burial-grounds	4,896 15	
Postage	878 70	
Telephone	831 63	
Travelling expenses of officers,	1,467 00	
Office expenses	818 64	
Vaccination	296 94	
Horses and vehicles	1,169 64	
Stationery	435 22	
Printing	2,876 96	
Advertising	12 50	
Medical examination of police and firemen	1,120 00	
Examination of plumbers	200 00	
	<hr/>	\$112,376 84
Public baths :		
Labor	\$15,595 48	
Other expenses	3,242 04	
	<hr/>	18,837 52
<i>Carried forward,</i>		<hr/> \$131,214 36

<i>Brought forward,</i>		\$131,214 36
Evergreen Cemetery :		
Labor	\$2,880 50	
Other expenses	374 07	
	<hr/>	3,254 57
Quarantine :		
Port physician and assistant	\$2,130 52	
Gallop's Island	4,776 69	
Steamer "Vigilant"	11,044 35	
Other expenses	469 02	
	<hr/>	18,420 58
Inspection of provisions		1,209 63
Inspection of milk and vinegar		5,654 04
	<hr/>	
Total		<u>\$159,753 18</u>

RECAPITULATION.

Appropriation	\$150,000 00	
Income from Evergreen Cemetery,	1,508 37	
¹ Inspection of milk and vinegar,	6,599 26	
¹ Inspection of provisions	1,653 84	
	<hr/>	\$159,761 47
		<hr/>
Appropriation		\$159,761 47
Expended		159,753 18
		<hr/>
Balance unexpended		<u>\$8 29</u>

INCOME.

Quarantine	\$7,835 23
Evergreen Cemetery	1,508 37
Inspector Milk and Vinegar	809 50
Rents (from buildings on the Epidemic Hos- pital grounds)	575 00
Disinfecting	120 00
	<hr/>
Total	<u>\$10,848 10</u>

¹ These sums are the unexpended balances turned over when these departments were transferred to the Board of Health.

REPORT OF PHYSICIAN TO THE BOARD OF HEALTH.

Boston, January 1, 1896.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report for the year ending December 31, 1895:

There have been 2,581 persons vaccinated, and certificates of vaccination have been given to 1,142 who have returned and proven themselves entitled to such certificates.

CITY PRISON.

On Sundays and holidays this institution has been visited, and the following diseases have been treated during the year: bronchitis, colic, delirium tremens, diarrhoea, epilepsy, otitis, rheumatism, synovitis, concussion, fracture, sprain, gunshot wounds, incised wounds, and scalp wounds.

SUFFOLK COUNTY JAIL.

In this institution 1,221 have been treated, requiring 3,299 visits. Two deaths from heart disease have occurred. Four patients have been sent to the hospital, 2 of these going to the Boston City Hospital and 2 to the Massachusetts General Hospital. Three patients were sent to the insane asylum. A tabular statement of the cases treated at this institution is appended:

**Tabular Statement of the Diseases treated at Suffolk County Jail,
for the Year ending December 31, 1895.**

DISEASES.	Remaining Jan. 1, 1895.	Treated during the year.	Recovered.	Improved.	Sent to Hospital.	Sent to Insane Asylum.	Discharged from custody.	Deaths.	Remaining Dec. 31, 1895.
General Diseases :									
Anæmia		16		16					
Febricula		45	45						
Fever, intermittent		8	7			1			
Marasmus		1			1				
Phthisis pulmonalis		5		5					
Rachitis		1				1			
Rheumatism, acute		4	4						
Rheumatism, chronic	2	47		49					
Functional Diseases of Nervous System :									
Delirium tremens		182	181						1
Epilepsy		5		5					
Neuralgia		50	50						
Organic Neuritic Disease :									
Sciatica		2	2						
Diseases of the Intellect :									
Dementia	1	3				2	2		
General Paralysis		1			1				
Mania		2				1	1		
Diseases of Heart :									
Fatty degeneration		2						2	
Diseases of Bronchi :									
Asthma		1		1					
Bronchitis, acute	2	41	43						
Bronchitis, chronic		9		9					
Diseases of Lungs :									
Pneumonia		1			1				
Diseases of Fauces :									
Pharyngitis		21	21						
<i>Carried forward</i>	5	447	353	35	3	3	5	2	1

STATEMENT OF THE DISEASES AT SUFFOLK COUNTY JAIL.— *Continued.*

DISEASES.	Remaining Jan. 1, 1895.	Treated during the year.	Recovered.	Improved.	Sent to Hospital.	Sent to Insane Asylum.	Discharged from custody.	Deaths.	Remaining Dec. 31, 1895.
<i>Brought forward</i>	5	447	358	85	3	3	5	2	1
Tonsillitis, acute		1	1						
Tonsillitis, follicular		6	6						
Diseases of Larynx :									
Laryngitis		1	1						
Diseases of Kidneys :									
Bright's disease		1					1		
Diseases of Liver :									
Hepatitis		1					1		
Diseases of Digestive System :									
Colic		2	2						
Constipation		214	214						
Diarrhoea		92	92						
Functional Diseases of Women :									
Dysmenorrhoea		6		6					
Menorrhagia		1		1					
Pregnancy		1					1		
Diseases of Cutaneous System :									
Acne		4		4					
Dermatitis		2	2						
Eczema		14	14						
Furuncle		2	2						
Herpes		1	1						
Onychia		1	1						
Pthiriasis		21	21						
Scabies		20	19						1
Urticaria		2	2						
Verruca		2	2						
Diseases of Eye :									
Conjunctivitis		12	11				1		
Poisons :									
Cocaine habit		1					1		
Opium habit	1	18					14		
<i>Carried forward</i>	6	808	744	96	3	3	24	2	2

STATEMENT OF THE DISEASES AT SUFFOLK COUNTY JAIL. — *Concluded.*

DISEASES.	Remaining Jan. 1, 1895.	Treated during the year.	Recovered.	Improved.	Sent to Hospital.	Sent to Insane Asylum.	Discharged from custody.	Deaths.	Re- maining Dec. 31, 1895.
<i>Brought forward</i>	6	868	744	96	3	3	24	2	2
Surgical diseases:									
Abscess		15	14						1
Chancroid		3	3						
Chronic Ulcer		5		4			1		
Gonorrhœa	4	44		45					3
Hæmorrhoids		5		4					1
Hernia		2					2		
Hydrocele		5		5					
Leucorrhœa		2		2					
Mastitis		1	1						
Otitis		2	2						
Orchitis		1					1		
Syphilis		23		21					2
Varix		1		1					
Injuries:									
Abrasions		19	18						1
Burns		4	3						1
Concussion of brain		1			1				
Contusions		23	23						
Fractures		2	2						
Sprains		13	13						
Wounds:									
Gunshot		2	2						
Incised		27	26				1		
Lacerated		13	10				2		1
Scalp	1	44	42				3		
Total	11	1,125	903	178	4	3	34	2	12
Malingering		85	85						
Grand total	11	1,210	988	178	4	3	34	2	12

HEALTH DEPARTMENT.

CITY TEMPORARY HOME.

At this institution 161 visits have been made. Three deaths have occurred. Five patients were sent to the Boston City Hospital and 1 to the Massachusetts General Hospital. The following diseases and injuries were treated : Bronchitis, childbirth (11 cases), delirium tremens, dermatitis, eczema, hæmatemesis, intermittent fever, ophthalmia, pneumonia, rheumatism (acute and chronic), septicæmia, syphilis, abrasions, contusions, lacerations, and sprains.

The work of vaccination and of attendance on the various institutions named has been performed by Dr. George A. Sargent, Medical Inspector.

INFECTIOUS DISEASES.

Thirty-nine cases reported as small-pox have been examined. None of these have proven to be variola. Each case of varicella reported has been carefully scrutinized, and when any circumstance, such as the age of the patient, or his general surroundings, has seemed to make the case at all suspicious, a personal visit has been made and the diagnosis confirmed by careful inspection.

Although the general supervision of scarlet fever and diphtheria has been assigned to medical inspectors of schools, still, in many cases, the services of a physician from this department have been required. The Board of Health, also, from time to time, has ordered forcible removals in cases of diphtheria, when the best interests of the city seemed to demand such action. Dr. Thomas B. Shea, medical inspector, has visited all these cases, and has personally superintended each forcible removal.

EXAMINATIONS FOR POLICE AND FIRE DEPARTMENTS.

Five hundred and forty-one men have been examined at the request of the Civil Service Commission for appointment in the Police and in the Fire Departments. At the request of the Board of Police nine men have been examined for retirement. At the request of the Fire Commissioner six men have been examined for retirement. Dr. Morton Prince has personally conducted these examinations.

DEATH RETURNS.

The bodies of 474 persons dying without a physician have been examined, and a proper certificate returned. A tabular statement of the cases investigated is appended. It will be noticed that more cases are marked "unknown" than in previous years. These are principally infants who have died suddenly in convulsions. It was thought better, for statistical reasons, to assign such cases to unknown causes, rather than to tabulate them by mere conjecture. It is recommended that undertakers be notified to show especial diligence in making prompt returns of all cases which are to be investigated from this office, as a compliance with the requirements of such notification will greatly facilitate the work of the physician.

Respectfully submitted,

WILLIAM G. MACDONALD, M.D.,

Physician to the Board of Health.

**Tabular Statement of the Causes of Deaths investigated by Physician
to the Board of Health for the Year ending December 31, 1895.**

DISEASES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
I. — Zymotics.													
Diarrhoea								1					1
Diphtheria	1						1	2	1	1	3	2	11
Measles	1				1	2							4
Typhoid fever							1		1	1	1	1	5
Whooping-cough	1						1		1				3
II. Constitutional.													
Cancer		2		1	1								4
Marasmus	2	2	1		3	1	3	6	8	3			29
Phthisis pulmonalis	2	2	7	6	4	7	6	7	2	5	3	4	55
Tubercular meningitis	2		2	1			1					1	7
Other constitutional diseases	1					1		1	2	2		1	8
III. Local.													
Apoplexy	1	1	2	1	1	2	1	1		2	1	2	15
Bronchitis	2	5	1	8							2	1	19
Gastro-enteritis	1		3		2	2	9	5	5	8	2	3	40
Heart disease	6	4	14	5	7	4	2	5	5	3	3	12	70
Meningitis						1	1		1	1	1		5
Nephritis					1		1		2	1		3	8
Pneumonia	5	8	3	4	2	1		1	1	2	4	1	32
Other local diseases	1	2		1			1	3	1				9
IV. Developmental.													
Inanition	2	1	4	2			1	3	1	2	1		17
Old age	6	2	5	1		2		3	3	4	2	1	29
Premature birth	1	2	2	1	2	2	1	3					14
Other developmental diseases	1			1	1								3
V. Violent.													
Accidental	1			2			1		1		1	1	7
Unknown	3	1		6	7	2	4	1	3	4	5	8	44
Still-births	2	4	5	3		3	5	2	1	2	2	2	31
Referred to Medical Examiner			1			1		1				1	4
Total	42	36	50	43	32	31	40	45	39	41	31	44	474

QUARANTINE STATION,
BOSTON HARBOR, February 1, 1896.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report of the Quarantine Department for the year ending December 31, 1895:

During the entire year all vessels from foreign ports except those from British North America, and all vessels from foreign ports having entered a United States port without complete discharge of passengers or cargo, have been stopped at this quarantine for inspection.

From June 1 to October 31 inclusive all vessels from ports south of Virginia have been detained for inspection.

During the year the following cases have been taken to Gallop's Island for treatment or detention:

January 15 a pauper from Deer Island was found to have measles. She was removed to Gallop's Island for isolation.

On the 18th of February two servants from one of the hotels in the city were found to be suffering from diphtheria. Not being able to obtain accommodation at the City Hospital, owing to the crowded condition of the contagious wards, they were sent to Gallop's Island.

An attendant at Austin Farm suffering from measles was sent to Gallop's Island for isolation April 9.

April 17 a boy with measles was sent from Boston, as there was no room at the City Hospital.

On the 9th of May a seaman on the S.S. "Gallina," from Mediterranean ports, was found to have typhoid fever. He was removed, together with his bedding and dunnage.

May 27 a woman, a steerage passenger on the S.S. "Catalonia," was removed for further observation, as the ship's surgeon thought it might be typhoid. It proved to be a case of enteritis.

A steerage passenger suffering from varicella was taken from S.S. "Gallia" June 2. Another steerage passenger on

the same ship, a woman, was removed for refusing to be vaccinated. She was discharged the next day, after being vaccinated at her own request.

August 9 a man was admitted from Boston. He had such severe symptoms that the attending physician in the city diagnosed the case as Asiatic cholera. A bacteriological examination of the stools, by Dr. Ernst, proved it to be a severe form of cholera morbus.

A man afflicted with leprosy was sent down from Boston September 11. He is still in the hospital.

Total number of cases admitted, eleven. All recovered.

April 10 one of the crew of the fishing schooner "Mizpah" was stricken with scarlet fever while the vessel was lying at her dock. The case was removed April 10 to the City Hospital.

The rest of the crew were inspected and the vessel fumigated before proceeding again to sea.

On the 7th of September a case of diphtheria was discovered amongst one of the crew of the S.S. "Gate City" while she was at her dock in Boston. She was disinfected and fumigated. The rest of the crew were carefully examined before sailing. No more cases occurred.

S.S. "Rita" on July 17, S.S. "Henry Dumors" August 12, S.S. "Taff" September 16, all bound for Southern domestic ports, were at the request of their agents disinfected by burning roll sulphur of not less than three pounds to the thousand cubic feet for twelve hours in the various compartments of the vessels, and their crews inspected. All personson board were in excellent condition when leaving port.

All other vessels than those specially noted, that were inspected during the year, were free from any contagious disease and in good sanitary condition.

The vessels inspected during the year were from the following ports:

West Indies . . .	358	South America . . .	59
Liverpool . . .	184	Glasgow . . .	27
Coastwise . . .	145	Hamburg . . .	27
London . . .	83	Hull . . .	23

Antwerp	22	Egypt	2
Mediterranean ports	22	Cebu	2
Mexico	20	Danzig	2
Manila	14	South Africa	2
Java	8	Chitagong	1
Swansea	7	Penarth	1
Australia	5	Harburg	1
West Coast Africa	5	Plymouth	1
Calcutta	4	Marseilles	1
Nicaragua	4	Archangel	1
Singapore	3	Southampton	1
Azores	3		
		Total	1,038

Classified as follows :

Steamers	637
Schooners	234
Barks	106
Brigs	48
Ships	13
Total	1,038

Number of vessels disinfected 5
one of which was a schooner; all the rest were steamers.

Number removed from vessels for sickness 3
Removed for refusing vaccination 1
Number of persons vaccinated 1,014

In addition to the list of vessels boarded, there were nine steamers, three barks, and one brig, all from foreign ports *via* a United States port, but not having discharged their cargoes, which were boarded and inspected. As their bills showed that they had already paid their quarantine fees at some other United States port, the usual dues of this quarantine were not collected.

Of these vessels whose fees were remitted :

7	paid quarantine fees at	New York.
3	“ “ “ “	Newport News.
2	“ “ “ “	Norfolk.
1	“ “ “ “	Baltimore.

The receipts of the department have been as follows:

Vessels of 500 tons and over, 757, at \$8	.	\$6,056 00
Vessels under 500 tons, 281, at \$5	.	1,405 00
Disinfection of 1 vessel, at \$25	.	25 00
Disinfection of 1 vessel, at \$20	.	20 00
Disinfection of 2 vessels, at \$15	.	30 00
Disinfection of 1 vessel, at \$10	.	10 00
Vaccinating 1,014 persons, at 25c.	.	253 50
Total	.	<u>\$7,799 50</u>
Paid City Collector	.	<u>\$7,799 50</u>

In addition to the above amount of cash, bills for board to the amount of \$60.01 were turned over to the City Collector for collection.

Total number of persons inspected during the year was 65,240. Of these, 4,213 were cattlemen, 30,526 seamen, and 30,501 passengers.

The following vessels ran by quarantine during this year:

January 8. Schooner "Molega," from Turk's Island; cargo, salt.

February 20. Brig "George," from Hayti; cargo, logwood.

February 20. Schooner "Sierra," from Hayti; cargo, logwood.

March 21. Schooner "John A. Matheson," from Cienfuegos; cargo, molasses.

June 2. Steamship "City of Macon," from Savannah; cargo, general.

July 5. Schooner "Ida L. Latham," from Brunswick; cargo, lumber.

July 19. Bark "Bessie Markham," from Cienfuegos; cargo, sugar.

October 11. Steamship "Cornal," from Galveston ; cargo, cotton.

October 19. Schooner "Frank W. Howe," from Brunswick ; cargo, lumber.

All of these vessels were required to receive the usual quarantine permit before entering at the Custom House.

There have been many and various improvements made on Gallop's Island during the year. The island is now in a more satisfactory condition than it has been for a long time.

The barn has been overhauled and repaired. Seven new stalls have been built for the use of the antitoxine horses, and six of them are at present in constant use. With the exception of some repairs on the roof, which may be needed later, the barn is now in first-class condition.

A new building has been erected close to the north-east corner of the barn. The building is about 40 × 30 feet. It consists of a large room for rearing the guinea-pigs, a bleeding-room, and a laboratory. It has a sufficient water supply from the city mains, and is heated by two large stoves.

On the wharf a new coal-run has been built, and the roof of the coal-shed has been repaired, tarred, and gravelled.

On the easterly side of the wharf a new set of side steps and landing for the row-boat have been built. The bath-house and steam-room are now practically continuous, the passageway between them having been roofed in. The old flag-staff that has been on the island for thirty-three years has been reset and firmly guyed with wire-ropes. The wet land below the road, between the fever hospital and stable, has been drained by a deep drain running from the road to the beach. The dwelling-house, barn, the two hospitals, both detention buildings, the ice-house, steam-room and bath-house, hen-house, carpenter-shop, and antitoxine buildings have been painted since last fall. With the exception of the dwelling-house all have been more or less extensively repaired and completely repainted inside. The fever hospital has also been refurnished throughout, and is now in a complete condition. The small-pox hospital is now being renovated, and is rapidly approaching completion.

The heavy storms of the year washed away a portion of

the roadway in front of the small-pox hospital and threatened the foundations of that building. This has now been repaired and the old rip-rap wall has been relaid, and with the addition of 130 tons of granite, a solid, upright wall, faced with a strong rip-rap addition, has been carried from the end of the government wall for about 125 feet towards the wharf. This has stood several severe storms, and we hope that for some years at least it will afford protection for the roadway.

All these repairs and improvements, except the erection of the antitoxine building and the coal-run and the repairs on the barn, have been done by labor furnished to this department from Deer Island, and Capt. George T. Ranlett has had entire supervision of the work. The department rests under a deep obligation to him for his many services during the year.

The annoyance of the defective and irregular water supply is now past history. The Water Board have placed a new 6-inch pipe in a trench 5 feet deep between Gallop's and Long Islands, and has obviated the danger of being broken by vessels dragging their anchors. The pipe has been continued on to the island by tunnelling the wall at the north-westerly end of the island and then carried along the roadway in front of the small-pox hospital. The old pipe that ran along the beach has been taken up and removed.

Under the management of Overseer F. L. Blanchard, the farm has been well fertilized, and the product of the island has increased to a considerable amount over the last few years.

The produce of the island has been as follows :

Potatoes . . .	120 bushels	Tomatoes . . .	15 bushels
Carrots . . .	125 "	Onions . . .	10 "
Beets . . .	63 "	Grapes . . .	2 "
Turnips . . .	19 "	Squash . . .	125
Hay . . .	3 tons	Pumpkins . . .	400
Parsnips . . .	3 bushels	Cabbages . . .	300

and enough garden vegetables in their season to supply the quarantine steamer and the island.

The head-boards in the graveyard have been taken up for the purpose of being repainted and relettered this winter.

The production of antitoxine has been continued during the year under the supervision of Dr. H. C. Ernst. Six horses are at present on the island, all of which are immunized. They are bled regularly and are in excellent condition. Besides these horses five others have been brought to the island, two of which died from the effects of the injections long before arriving at the stage of immunization. Two were returned to Boston, being too susceptible to the action of the toxine, and one was killed, as it reacted strongly to the mallein test for glanders.

The steamer "Vigilant" is in good condition. Besides her usual annual repairs, her sea and outboard delivery valves have been replaced by new ones of composition metal.

Dr. Francis A. Lane, port physician, resigned December 5th to enter private practice, and on the same date Dr. David D. Brough was appointed to succeed him. Dr. Ben. H. Metcalf was appointed assistant port physician, and entered on his duties January 1, 1896.

Respectfully submitted,

DAVID D. BROUGH, M.D.,
Port Physician.

REPORT OF THE INSPECTOR OF MILK AND VINEGAR.

BUREAU OF MILK INSPECTION,
994 WASHINGTON STREET, BOSTON, MASS.

To the Board of Health, Boston, Mass. :

GENTLEMEN: I have the honor to report on the work performed by the Department for the Inspection of Milk and Vinegar from January 31, 1895, to July 1, 1895, when the department as such ceased to exist, and on that performed by its successor under the Board of Health, the Bureau of Milk Inspection, from the latter date to January 31, 1896.

In February, 1895, Mr. Joseph F. Baldwin, who for nearly four years had faithfully performed the duties of a collector of samples, was obliged by ill health to resign his position, and in March Mr. Thomas A. Ball was appointed in his place. In August Mr. Dennis J. Quinn, who, since September, 1891, had acted as agent to the inspector of milk for special work in the enforcement of the statutes of that year relative to oleomargarine, and in the investigation of the quality of milk as sold in restaurants, became incapacitated for active work. With the exceptions above noted, the personnel of the bureau is the same as has obtained for several years under the Department for the Inspection of Milk and Vinegar.

During the year 12,587 samples of milk have been examined. As is the case in previous years, the larger part of these have been taken from milk-wagons during the early morning hours. Of the entire number, 7,285 were taken from wagons, 4,916 from stores and restaurants, and 386 were brought to the office for inspection by milkmen, store-keepers, and consumers. While a number of the samples examined have shown unusually extensive adulteration,—one, for instance, from a store being more than half water,—the tendency has been, as in previous years, constantly toward

improvement. This is conspicuously noticeable in the case of restaurants. The adulterations were, as heretofore, mainly abstraction of cream and addition of water. The use of preservatives and coloring agents is very uncommon, and although more samples containing these substances were found than during the period covered by the last report, their use is more restricted, for the colored and preserved specimens came chiefly from two dealers, both of whom paid heavy fines on several counts.

The methods of analysis employed have been the same as described in previous reports.

The further legislation relative to adulteration of milk asked for of the Legislature of 1895, and referred to in the last report of the Department for the Inspection of Milk and Vinegar, was defeated in the Senate. It is probable that practically the same bill will be introduced during the present session.

During the past year complaints for the sale of milk not of good standard quality, based on seventy-three samples obtained by purchase in restaurants, were entered in the several district courts. The analyses of these samples are given in the table below:

No.	Fat.	Solids not Fat.	Total Solids.	No.	Fat.	Solids not Fat.	Total Solids.
1	1.52	5.99	7.51	14	2.62	7.58	10.20
2	2.52	5.22	7.74	15	2.40	7.86	10.26
3	1.18	7.02	8.20	16	1.58	9.01	10.59
4	1.11	7.12	8.23	17	1.70	8.90	10.60
5	1.02	7.76	8.78	18	1.62	8.99	10.61
6	2.82	6.14	8.96	19	1.62	8.99	10.61
7	3.42	5.98	9.40	20	2.02	8.64	10.66
8	0.90	8.55	9.45	21	3.04	7.65	10.69
9	0.95	8.60	9.55	22	1.60	9.20	10.80
10	2.20	7.50	9.70	23	2.00	8.80	10.80
11	1.02	8.76	9.78	24	1.92	8.90	10.82
12	1.50	8.29	9.79	25	1.52	9.32	10.84
13	1.22	8.68	9.90	26	1.22	9.67	10.89

No.	Fat.	Solids not Fat.	Total Solids.	No.	Fat.	Solids not Fat.	Total Solids.
27	1.90	9.02	10.92	51	2.30	9.20	11.50
28	2.23	8.72	10.95	52	2.62	8.88	11.50
29	2.00	8.98	10.98	53	2.52	9.01	11.53
30	2.02	8.98	11.00	54	2.60	8.93	11.53
31	2.18	8.85	11.03	55	2.62	8.93	11.55
32	1.82	9.27	11.09	56	2.85	8.75	11.60
33	2.50	8.60	11.10	57	2.52	9.11	11.63
34	2.20	8.91	11.11	58	3.00	8.64	11.64
35	2.30	8.82	11.12	59	2.90	8.79	11.69
36	2.30	8.83	11.13	60	2.60	9.10	11.70
37	2.40	8.74	11.14	61	2.02	9.75	11.77
38	2.10	9.17	11.27	62	3.02	8.75	11.77
39	2.39	8.90	11.29	63	2.80	9.00	11.80
40	2.48	8.81	11.29	64	3.50	8.34	11.84
41	2.23	9.08	11.31	65	3.40	8.46	11.86
42	2.10	9.23	11.33	66	3.02	8.87	11.89
43	3.08	8.29	11.37	67	4.28	7.61	11.89
44	2.50	8.90	11.40	68	2.70	9.22	11.92
45	2.82	8.59	11.41	69	3.02	8.90	11.92
46	2.50	8.92	11.42	70	3.22	8.71	11.93
47	2.60	8.82	11.42	71	2.90	9.04	11.94
48	2.58	8.86	11.44	72	2.88	9.07	11.95
49	2.40	9.06	11.46	73	3.30	8.68	11.98
50	2.62	8.87	11.49				

Complaints were entered against store-keepers for possession of milk not of good standard quality, with intent to sell, based on the analyses of sixty-six specimens, as follows:

No.	Fat.	Solids not Fat.	Total Solids.	No.	Fat.	Solids not Fat.	Total Solids.
1	1.60	4.23	5.83	34	2.38	9.08	11.46
2	2.00	7.57	9.57	35	2.58	8.89	11.47
3	1.18	8.70	9.88	36	3.38	8.10	11.48
4	1.24	8.70	9.94	37	2.90	8.62	11.52
5	1.92	8.15	10.07	38	2.82	8.74	11.56
6	1.43	8.89	10.32	39	2.60	8.97	11.57
7	2.22	8.23	10.45	40	2.83	8.81	11.64
8	2.30	8.20	10.50	41	3.82	7.83	11.65
9	3.22	7.30	10.52	42	2.40	9.28	11.68
10	2.02	8.61	10.63	43	3.10	8.59	11.69
11	2.60	8.20	10.80	44	2.50	9.20	11.70
12	2.23	8.60	10.83	45	2.62	9.08	11.70
13	2.42	8.44	10.86	46	2.45	9.31	11.76
14	2.10	8.81	10.91	47	2.97	8.82	11.79
15	4.40	6.55	10.95	48	3.65	8.15	11.80
16	2.42	8.56	10.98	49	3.50	8.31	11.81
17	2.23	8.81	11.04	50	2.30	9.52	11.82
18	2.60	8.44	11.04	51	2.90	8.92	11.82
19	2.02	9.05	11.07	52	2.98	8.84	11.82
20	2.18	8.89	11.07	53	3.37	8.47	11.84
21	2.20	8.87	11.07	54	3.20	8.66	11.86
22	2.40	8.67	11.07	55	2.83	9.04	11.87
23	2.85	8.31	11.16	56	3.00	8.87	11.87
24	1.82	9.36	11.18	57	3.12	8.75	11.87
25	2.00	9.18	11.18	58	2.80	9.08	11.88
26	2.78	8.41	11.19	59	2.95	8.94	11.89
27	2.28	8.95	11.23	60	3.58	8.32	11.90
28	2.38	8.90	11.28	61	3.77	8.13	11.90
29	2.30	9.07	11.37	62	2.80	9.13	11.93
30	2.78	8.59	11.37	63	2.70	9.25	11.95
31	3.20	8.18	11.38	64	3.02	8.94	11.96
32	2.37	9.04	11.41	65	3.40	8.59	11.99
33	2.62	8.79	11.41	66	3.02	9.06	12.08

One hundred and forty-six samples not of good standard quality, taken from wagons, forming the basis of other complaints in court, yielded the following results :

No.	Fat.	Solids not Fat.	Total Solids.	No.	Fat.	Solids not Fat.	Total Solids.
1	2.38	4.67	7.05	31	2.20	9.08	11.28
2	2.30	7.66	9.96	32	2.58	8.77	11.35
3	3.40	6.63	10.03	33	2.60	8.75	11.35
4	0.40	9.64	10.04	34	1.90	9.50	11.40
5	1.90	8.31	10.21	35	3.10	8.34	11.44
6	3.00	7.49	10.49	36	3.28	8.17	11.45
7	3.10	7.45	10.55	37	3.20	8.27	11.47
8	1.72	8.88	10.60	38	3.10	8.39	11.49
9	3.23	7.44	10.67	39	2.88	8.62	11.50
10	2.20	8.51	10.71	40	3.40	8.10	11.50
11	3.40	7.37	10.77	41	3.22	8.31	11.53
12	2.42	8.39	10.81	42	3.60	7.93	11.53
13	2.72	8.09	10.81	43	2.45	9.10	11.55
14	2.58	8.27	10.85	44	2.60	8.95	11.55
15	2.43	8.43	10.86	45	2.30	9.26	11.56
16	2.98	7.88	10.86	46	2.60	8.97	11.57
17	3.23	7.65	10.88	47	3.40	8.18	11.58
18	1.42	8.48	10.90	48	3.58	8.00	11.58
19	2.20	8.72	10.92	49	3.24	8.35	11.59
20	3.35	7.60	10.95	50	3.40	8.19	11.59
21	2.40	8.62	11.02	51	2.60	9.00	11.60
22	2.80	8.28	11.08	52	3.40	8.21	11.61
23	2.43	8.68	11.11	53	2.60	9.12	11.62
24	2.98	8.15	11.13	54	3.10	8.52	11.62
25	1.58	9.57	11.15	55	3.40	8.23	11.63
26	2.30	8.90	11.20	56	3.50	8.16	11.66
27	2.23	9.00	11.23	57	3.66	8.00	11.66
28	3.00	8.25	11.25	58	3.10	8.58	11.68
29	2.98	8.28	11.26	59	3.20	8.48	11.68
30	2.90	8.37	11.27	60	3.27	8.41	11.68

No.	Fat.	Solids not Fat.	Total Solids.	No.	Fat.	Solids not Fat.	Total Solids.
61	3.32	8.36	11.68	94	3.62	8.24	11.86
62	3.40	8.29	11.69	95	3.23	8.64	11.87
63	2.60	9.10	11.70	96	3.42	8.45	11.87
64	2.80	8.90	11.70	97	3.22	8.66	11.88
65	2.70	9.01	11.71	98	3.40	8.48	11.88
66	3.32	8.39	11.71	99	3.92	7.96	11.88
67	3.20	8.53	11.73	100	3.42	8.47	11.89
68	3.30	8.44	11.74	101	3.60	8.29	11.89
69	3.02	8.73	11.75	102	3.38	8.52	11.90
70	3.32	8.43	11.75	103	3.58	8.32	11.90
71	3.60	8.16	11.76	104	3.60	8.30	11.90
72	3.30	8.47	11.77	105	3.62	8.29	11.91
73	3.50	8.27	11.77	106	2.95	8.97	11.92
74	2.62	9.16	11.78	107	3.10	8.82	11.92
75	2.63	9.15	11.78	108	3.20	8.72	11.92
76	2.72	9.06	11.78	109	2.60	9.33	11.93
77	2.90	8.88	11.78	110	3.50	8.43	11.93
78	3.40	8.38	11.78	111	3.10	8.84	11.94
79	3.60	8.18	11.78	112	3.10	8.84	11.94
80	3.02	8.77	11.79	113	3.10	8.84	11.94
81	3.30	8.49	11.79	114	3.62	8.32	11.94
82	2.90	8.90	11.80	115	3.62	8.33	11.95
83	3.40	8.40	11.80	116	3.22	8.74	11.96
84	3.40	8.40	11.80	117	3.32	8.64	11.96
85	3.40	8.40	11.80	118	3.50	8.46	11.96
86	3.60	8.20	11.80	119	3.80	8.16	11.96
87	3.38	8.43	11.81	120	3.03	8.94	11.97
88	3.00	8.82	11.82	121	3.10	8.87	11.97
89	3.40	8.42	11.82	122	3.30	8.67	11.97
90	3.20	8.63	11.83	123	3.38	8.59	11.97
91	3.38	8.46	11.84	124	3.40	8.57	11.97
92	3.32	8.53	11.85	125	3.42	8.55	11.97
93	3.45	8.40	11.85	126	3.30	8.68	11.98

No.	Fat.	Solids not Fat.	Total Solids.	No.	Fat.	Solids not Fat.	Total Solids.
127	3.30	8.68	11.98	137	3.80	8.23	12.03
128	3.40	8.58	11.98	138	3.80	8.23	12.03
129	3.60	8.38	11.98	139	3.20	8.85	12.05
130	3.60	8.38	11.98	140	3.92	8.15	12.07
131	2.90	9.09	11.99	141	3.10	8.91	12.10
132	3.40	8.59	11.99	142	3.20	8.92	12.12
133	3.10	8.91	12.01	143	3.42	8.70	12.12
134	3.30	8.72	12.02	144	3.40	8.73	12.13
135	3.32	8.70	12.02	145	3.70	8.47	12.17
136	3.50	8.52	12.0	146	3.40	8.88	12.28

Complaints for possession of milk not of good standard quality and containing added coloring matter, with intent to sell, were entered based on samples which yielded the following results:

No.	Fat.	Solids not Fat.	Total Solids.	Color.
1	3.55	8.55	11.10	Annatto.
2	2.60	8.72	11.32	Caramel.
3	2.60	8.93	11.53	Annatto.
4	3.83	7.87	11.70	"
5	3.30	8.80	12.13	"

Eleven samples containing annatto, and seven containing boracic acid, all otherwise of good standard quality, were brought to the attention of the courts.

Eight samples from cans marked "Skimmed Milk," some of which proved to be watered skimmed milk, and others ordinary watered "whole milk," on which complaints were based for violation of the law relating to skimmed milk, yielded the following results:

No.	Fat.	Solids not Fat.	Total Solids.	Source.
1	0.20	4.97	5.17	Wagon.
2	0.56	7.58	8.14	"
3	1.63	7.06	8.69	"
4	1.91	8.52	10.43	"
5	2.89	8.71	11.60	Store.
6	5.27	6.38	11.65	"
7	3.07	7.92	11.99	"
8	3.28	8.84	12.12	Wagon.

A complete canvass was made of the several districts of the city to ascertain the location of every place where milk is sold. Several hundred shops were found whose owners, through ignorance of the law, inadvertence, or other cause, had neglected to be registered. To these persons notices were sent to the effect that they must at once register, or, continuing the sale without complying with the law, be brought before the courts. Most persons, so warned, at once complied; those who did not were prosecuted.

The local oleomargarine trade is now virtually dead, owing to the enforcement of chapters 58 and 412 of the Acts of 1891. Chapter 58 prohibits the sale of oleomargarine colored in imitation of yellow butter, and chapter 412 prescribes a number of regulations to be observed by dealers, and prohibits the serving of oleomargarine in restaurants and hotels without notification to the guest of the true character of the substance served. But ten persons or firms were licensed or registered as dealers in oleomargarine during the year against seventy-four during 1894. Most of these ten ceased selling after a short experience, the sale of colored goods meaning prosecution, the keeping of uncolored natural oleomargarine meaning limited sales and greater or less pecuniary loss. The prosecution of complaints based on twenty-one sales of the colored article sufficed to drive the fraudulent imitation out of the market. At present those desiring to use the colored oleomargarine obtain it on order from Rhode Island, or by ordering through agents who have

regular canvassing routes in the city. The tubs are forwarded by express. The chief buyers are keepers of restaurants and boarding-houses. For a time a considerable increase was observed in the use of the article in restaurants, and seventy-one cases were entered in court for failure to notify guests.

During the early part of the year the first of what was intended to be a series of carloads of "filled cheese" from Wisconsin was received in Boston and sold to reputable dealers in the city. Analysis of samples showed the article to be a product of lard and skimmed milk. A warrant was issued for the arrest of the selling agent, who at once left the city. The dealers who had bought were notified not to sell, and all stopped payment of their checks and returned the goods to the agent at Chicago. Since that time, so far as is known, there have been no further shipments.

The character of the vinegar and cider vinegar samples obtained has continued to be uniformly good, but few being found which required complaint in court.

SUMMARY OF ALL SAMPLES EXAMINED.

Number of samples of milk from wagons	7,285
“ “ “ “ shops and restaurants,	4,916
“ “ brought in by the public	386
“ “ butter and oleomargarine	582
“ “ cheese	6
“ “ vinegar and cider vinegar	804
Total	13,979

LICENSES.

Number of licenses issued to milk dealers	598
“ of new registrations of shop-keepers who sell milk	1,019
“ of licenses and registrations of dealers in oleomargarine	10
Total	1,627
Amount derived from above and paid to the city	\$813.50

COMPLAINTS.

During the year 461 offences were complained of in the various district courts, as follows :

Boston	213
Roxbury District	60
South Boston District	46
East Boston District	32
Charlestown District	39
West Roxbury District	35
Dorchester District	24
Brighton District	12
Total	<hr/> 461

The offences charged were as follows :

Possession of milk not of good standard quality, with intent to sell	212
Sale of milk not of good standard quality (restaurant cases)	73
Possession of milk not of good standard quality and colored with annatto, with intent to sell	4
Possession of milk not of good standard quality and colored with caramel, with intent to sell	1
Possession of milk containing annatto, with intent to sell	11
Possession of milk containing boracic acid, with intent to sell	7
Possession of skimmed milk not of good standard quality, with intent to sell	8
Sale of milk, not being registered	20
Sale of milk, not being licensed	5
Exposing milk for sale from a wagon not bearing name and license number	4
Obstructing a collector in the performance of his duty	1
Sale of oleomargarine not properly labelled	3
Sale of oleomargarine, not being registered	6

Sale of colored oleomargarine (Sect. 1, Chap. 58, St. 1891)	21
Sale of oleomargarine as butter (Sect. 1, Chap. 412, St. 1891)	1
Sale of oleomargarine without posting placard (Sect. 3, Chap. 412, St. 1891)	2
Sale of oleomargarine from wagons not properly marked (Sect. 4, Chap. 412, St. 1891)	2
Serving oleomargarine in restaurants without notifying guests (Sect. 5, Chap. 412, St. 1891)	71
Possession of adulterated vinegar, with intent to sell,	2
Possession of adulterated cider-vinegar, with intent to sell	5
Sale of vinegar not the product of cider as cider-vinegar	1
Sale of adulterated cheese	1
<hr/>	
Total	461

The results were as follows :

Warrants returned without service	12
<i>Nol pros'd</i>	7
Acquittals	20
Convictions	413
Pending	9

Of the cases appealed to the Superior Court, one was *nol pros'd*, three resulted in acquittal, eight are pending, and the rest settled in favor of the Commonwealth.

The amount paid in fines was \$12,044.

EXPENDITURES TO JULY 1, 1895.

Salaries and services	\$5,009 50
Maintenance of horse, horse hire, veterinary services, etc.	294 51
Purchase of new horse	225 00
Purchase of open wagon and harness	80 00
<hr/>	
<i>Carried forward,</i>	\$5,609 01

<i>Brought forward,</i>	\$5,609 01
Collector's expenses	264 67
Printing	202 65
Postage and stationery	82 38
Collectors' supplies (bottles, tags, wire, etc.) .	111 81
Telephone	81 00
Apparatus	48 22
	<hr/>
	\$6,399 74
Balance of appropriation turned over to Board of Health	6,600 26
	<hr/>
Total appropriation	\$13,000 00

Respectfully submitted,

CHARLES HARRINGTON,

Inspector.

THE LAWS OF MASSACHUSETTS

RELATING TO THE

SALE AND INSPECTION OF MILK.

[CHAPTER 57, PUBLIC STATUTES.]

SECTION 1. The mayor and aldermen of cities shall, and the selectmen of towns may, annually appoint one or more persons to be inspectors of milk for their respective places, who shall be sworn before entering upon the duties of their office. Each inspector shall publish a notice of his appointment for two weeks in a newspaper published in his city or town, or, if no newspaper is published therein, he shall post up such notice in two or more public places in such city or town.

SECT. 2. (*As amended by Section 1 of Chapter 318 of the Acts of 1886.*) Such inspectors shall keep an office, and shall record in books kept for the purpose the names and places of business of all persons engaged in the sale of milk within their city or town. Said inspectors may, with the approval of the mayor or the selectmen, employ suitable persons to act as collectors of samples, who shall be sworn before entering upon their duties. Said inspectors, or the collectors employed and qualified as aforesaid, may enter all places where milk is stored or kept for sale, and all carriages used for the conveyance of milk, and the said inspectors or the collectors may take samples for analysis from all such places or carriages, and at the same time a portion of each sample so taken shall, if the person taking the same be requested so to do, be sealed and delivered to the owner or person from whose possession the same is taken, and a receipt given therefor to the person taking the same. The inspectors shall cause the samples of milk so taken to be analyzed or otherwise satisfactorily tested; the result of such analysis or test they shall record and preserve as evidence. The inspectors shall receive such compensation as the mayor or aldermen or selectmen may determine.

SECT. 3. In all cities and in all towns in which there is an inspector of milk, every person who conveys milk, in carriages or otherwise, for the purpose of selling the same in such city or town, shall annually, on the first day of May, or within thirty days thereafter, be licensed by the inspector or inspectors of milk of such city or town to sell milk within the limits thereof, and shall pay to such inspector or inspectors fifty cents each to the use of the city or town. The inspector or inspectors shall pay over monthly to the treasurer of such city or town all sums collected by him or them. Licenses shall be issued only in the names

exchange, or deliver, milk from which the cream or any part thereof of the owners of carriages or other vehicles, and shall, for the purposes of this chapter, be conclusive evidence of ownership. No license shall be sold, assigned, or transferred. Each license shall record the name, residence, place of business, number of carriages or other vehicles used, the name and residence of every driver or other person engaged in carrying or selling said milk, and the number of the license. Each licensee shall, before engaging in the sale of milk, cause his name, the number of his license, and his place of business to be legibly placed on each outer side of all carriages or vehicles used by him in the conveyance and sale of milk, and he shall report to the inspector or inspectors any change of driver or other person employed by him which may occur during the time of his license. Whoever, without being first licensed under the provisions of this section, sells milk or exposes it for sale from carriages or other vehicles, or has it in his custody or possession with intent so to sell, and whoever violates any of the provisions of this section, shall, for a first offence, be punished by fine of not less than thirty nor more than one hundred dollars; for a second offence, by fine of not less than fifty nor more than three hundred dollars; and for a subsequent offence, by fine of fifty dollars and by imprisonment in the house of correction for not less than thirty nor more than sixty days.

SECT. 4. Every person, before selling milk or offering it for sale in a store, booth, stand, or market-place in a city, or in a town in which an inspector or inspectors of milk are appointed, shall register in the books of such inspector or inspectors, and shall pay to him or them fifty cents to the use of such city or town; and whoever neglects so to register shall be punished for each offence by fine not exceeding twenty dollars.

SECT. 5. (*As amended by Section 2 of Chapter 318 of the Acts of 1886.*) Whoever, by himself or by his servant or agent, or as the servant or agent of another person, sells, exchanges, or delivers, or has in his custody or possession with intent to sell or exchange, or exposes or offers for sale or exchange, adulterated milk, or milk to which water or any foreign substance has been added, or milk produced from cows fed on the refuse of distilleries, or from sick or diseased cows, or milk not of good standard quality, shall, for a first offence, be punished by fine of not less than fifty nor more than two hundred dollars; for a second offence, by fine of not less than one hundred nor more than three hundred dollars, or by imprisonment in the house of correction for not less than thirty nor more than sixty days; and for subsequent offence, by fine of fifty dollars and by imprisonment in the house of correction for not less than sixty nor more than ninety days.

SECT. 6. Whoever, by himself or by his servant or agent, or as the servant or agent of any other person, sells, exchanges, or delivers, or has in his custody or possession with intent to sell or exchange, or exposes or offers for sale as pure milk, any milk from which the cream or a part thereof has been removed, shall be punished by the penalties provided in the preceding section.

SECT. 7. (*As amended by Chapter 352, Acts of 1885.*) No dealer in milk, and no servant or agent of such a dealer, shall sell, exchange, or deliver, or have in his custody or possession with intent to sell,

has been removed, unless in a conspicuous place above the centre upon the outside of every vessel, can, or package from or in which such milk is sold the words "**SKIMMED MILK**" are distinctly marked in uncondensed Gothic letters not less than one inch in length. Whoever violates the provisions of this section shall be punished by the penalties provided in section five.

SECT. 8. (*As amended by Chapter 310, Acts of 1884.*) Any inspector of milk, and any servant or agent of an inspector, who wilfully connives at or assists in a violation of the provisions of this chapter, and whoever hinders, obstructs, or in any way interferes with any inspector of milk, or any servant or agent of an inspector, in the performance of his duty, shall be punished by fine of not less than one hundred nor more than three hundred dollars, or by imprisonment for not less than thirty nor more than sixty days.

SECT. 9. (*As amended by Section 2 of Chapter 318 of the Acts of 1886.*) In all prosecutions under this chapter, if the milk is shown upon analysis to contain more than eighty-seven per cent. of watery fluid, or to contain less than thirteen per cent. of milk solids, or to contain less than nine and three-tenths per cent. of milk solids, exclusive of fat, it shall be deemed for the purpose of this act to be not of good standard quality, except during the months of May and June, when milk containing less than twelve per cent. of milk solids shall be deemed to be not of good standard quality.

SECT. 10. It shall be the duty of every inspector to institute a complaint for a violation of any of the provisions of this chapter, on the information of any person who lays before him satisfactory evidence by which to sustain such complaint.

SECT. 11. Each inspector shall cause the name and place of business of every person convicted of selling adulterated milk, or of having the same in his possession with intent to sell, to be published in two newspapers in the county in which the offence was committed.

SECT. 12. (*Section 8 of Chapter 352 of the Acts of 1885*) No person shall sell, exchange, or deliver, or have in his custody or possession with intent to sell, exchange, or deliver, skimmed milk containing less than nine and three-tenths per cent. of milk solids, exclusive of fat. Whoever violates the provisions of this section shall be punished by the penalties provided in section five of chapter fifty-seven of the Public Statutes.

SECT. 13. (*Section 3 of Chapter 318 of the Acts of 1886.*) If the said inspector or collector, after being so requested, shall refuse or neglect to seal and deliver to the owner or person from whose possession the same is taken, as provided in section two, a portion of the sample taken as aforesaid, no evidence shall be received in any court of the results of the analysis or test of the same, which may have been recorded and preserved as aforesaid.

SECT. 14. (*Section 4 of Chapter 318 of the Acts of 1886.*) Whoever makes, uses, or has in his possession any imitation or counterfeit of any seal used by any milk inspector or his agents, and whoever changes, or in any manner tampers with, any sample taken or sealed as provided in section two, shall be punished by fine not exceeding fifty dollars, or by imprisonment in the house of correction not exceeding ninety days.

LAWS OF MASSACHUSETTS

RELATING TO THE

INSPECTION AND SALE OF OLEOMARGARINE.

[SECTIONS 17, 18, 19, 20, AND 21 OF CHAPTER 56 OF THE PUBLIC STATUTES, AS AMENDED BY CHAPTER 310 OF THE ACTS OF 1884, AND CHAPTER 352, ACTS OF 1885, AND CHAPTER 317 OF THE ACTS OF 1886.]

SECTION 17. (*As amended by Section 1 of Chapter 317 of the Acts of 1886.*) Whoever, by himself or his agents, sells, exposes for sale, or has in his possession with intent to sell, any article, substance, or compound made in imitation or semblance of butter or as a substitute for butter, and not made exclusively and wholly of milk or cream, or containing any fats, oils, or grease not produced from milk or cream, shall have the words "**IMITATION BUTTER,**" or if such substitute is the compound known as "**OLEOMARGARINE,**" then the word "**OLEOMARGARINE,**" or, if it is known as "**BUTTERINE,**" then the word "**BUTTERINE,**" stamped, labelled, or marked, in a straight line, in printed letters of plain, uncondensed Gothic type, not less than one-half inch in length, so that said words cannot be easily defaced, upon the top, side, and bottom of every tub, firkin, box, or package containing any of the said article, substance, or compound. The said stamp, label, or mark shall contain no other words. And whoever, by himself, or his agents, exposes or offers for sale any of the said article, substance, or compound not in the original package shall attach to the said article, substance, or compound, in a conspicuous place, a label bearing the words "**IMITATION BUTTER,**" "**OLEOMARGARINE,**" or "**BUTTERINE,**" as the article may be, in printed letters of plain, uncondensed Gothic type, not less than one-half inch in length. And in cases of retail sales of any of said article, substance, or compound not in the original packages, the seller shall, by himself or his agents, attach to each package so sold, and shall deliver therewith to the purchaser, a label or wrapper bearing in a conspicuous place, upon the outside of the package, the words "**IMITATION BUTTER,**" "**OLEOMARGARINE,**" or "**BUTTERINE,**" and no other words, in printed letters, in a straight line of plain, uncondensed Gothic type, not less than one-half inch in length.

SECT. 18. Whosoever, by himself or his agent, sells, exposes for sale, or has in his possession with intent to sell, any article, substance, or compound made in imitation or semblance of cheese, as a substitute

for cheese, and not made exclusively and wholly of milk or cream, or containing any fats, oils, or grease not produced from milk or cream, shall have the words "**IMITATION CHEESE,**" stamped, labelled, or marked, in printed letters of plain, uncondensed Gothic type, not less than one inch in length, so that the words cannot easily be defaced, upon the side of every cheese-cloth or band around the same, and upon the top and side of every tub, firkin, box, or package containing any of said article, substance, or compound. And in case of retail sales of any of said article, substance, or compound not in the original package, the seller shall, by himself or his agent, attach to each package so sold, and shall deliver therewith to the purchaser, a label or wrapper bearing in a conspicuous place upon the outside of the package the words "**IMITATION CHEESE,**" in printed letters of plain, uncondensed Gothic type, not less than one inch in length.

SECT. 19. (*As amended by Section 2 of Chapter 317 of the Acts of 1886.*) Whoever sells, exposes for sale, or has in his possession with intent to sell, any article, substance, or compound made in imitation or semblance of butter or cheese, or as a substitute for butter or cheese, except as provided in the two preceding sections, and whoever, with intent to deceive, defaces, erases, cancels, or removes any mark, stamp, brand, label, or wrapper provided for in such sections, or in any manner shall falsely label, stamp, or mark any box, tub, article, or package marked, stamped, or labelled as aforesaid, shall for every such offence forfeit to the city or town where the offence was committed one hundred dollars, and for a second and each subsequent offence two hundred dollars.

SECT. 20. Inspectors of milk shall institute complaints for violations of the provisions of the three preceding sections when they have reasonable cause to believe that such provisions have been violated, and on the information of any person who lays before them satisfactory evidence by which to sustain such complaint. Said inspectors may enter all places where butter or cheese is stored or kept for sale, and said inspector shall also take specimens of suspected butter or cheese, and cause them to be analyzed or otherwise satisfactorily tested, the result of which analysis or test they shall record and preserve as evidence; and a certificate of such results, sworn to by the analyzer, shall be admitted in evidence in all prosecutions under this and three preceding sections. The expense of such analysis or test, not exceeding twenty dollars in any one case, may be included in the costs of such prosecutions. Whoever hinders, obstructs, or in any way interferes with any inspector, or any agent of an inspector, in the performance of his duty, shall be punished by a fine of fifty dollars for the first offence, and of one hundred dollars for each subsequent offence.

SECT. 21. For the purposes of the four preceding sections the terms "butter" and "cheese" shall mean the products which are usually known by these names, and are manufactured exclusively from milk or cream, with salt and rennet, and with or without coloring-matter.

[CHAPTER 317 OF THE ACTS OF 1886.]

SECTION 3. Whoever, by himself or his agents, sells, exposes for sale, or has in his possession with intent to sell, any article, substance, or compound made in imitation or semblance of butter, or as a substitute for butter, and not made exclusively and wholly of milk or cream, or containing any fats, oils, or grease not produced from milk or cream, contained in any box, tub, article, or package marked or labelled with the word "dairy" or the word "creamery," or the name of any breed of dairy cattle, shall for every such offence forfeit to the city or town where the offence was committed one hundred dollars, and for a second and each subsequent offence two hundred dollars.

SECT. 4. Every person who conveys any imitation butter, oleomargarine, or butterine in carriages or otherwise, for the purpose of selling the same in any city or town, shall, within thirty days of the passage of this act, and annually on the first day of May, or within thirty days thereafter, be licensed by the inspector or inspectors of milk of such city or town to sell the same within the limits thereof, and shall pay to such inspector or inspectors fifty cents to the use of the city or town. The inspector or inspectors shall pay over monthly to the treasurer of such city or town all sums collected by him or them. In towns in which there is no inspector of milk, licenses shall be issued by the town clerk. Licenses shall be issued only in the names of the owners of carriages or other vehicles, and shall, for the purposes of this chapter, be conclusive evidence of ownership. No license shall be sold, assigned, or transferred. Each license shall record the name, residence, place of business, number of carriages or other vehicles used, the name and residence of every driver or other person engaged in carrying or selling imitation butter, oleomargarine, or butterine, and the number of the license. Each licensee shall, before engaging in the sale of any of the articles as aforesaid, cause his name, the number of his license, his place of business, to be legibly placed on each outer side of all carriages or vehicles used by him in the conveyance and sale of the articles as aforesaid, in Gothic letters, not less than one inch in length, and he shall report to the inspector or inspectors any change of driver or other person employed by him which may occur during the term of his license. Whoever, without being first licensed under the provisions of this section, sells any of the articles as aforesaid, or exposes or offers them for sale from carriages or other vehicles, or has them in his custody or possession with intent so to sell, and whoever violates any of the provisions of this section, shall, for the first offence, be punished by a fine of not less than thirty nor more than one hundred dollars; for a second offence, by a fine of not less than fifty nor more than three hundred dollars.

SECT. 5. Every person, before selling or offering for sale any of the articles as aforesaid in a store, booth, stand, or market-place, in a city or in a town in which an inspector or inspectors of milk are appointed, shall within thirty days of the passage of this act, and annually on the first day of May or within thirty days thereafter, register in the books of such inspector or inspectors, or if there be no inspector, then in the

books of the town clerk, and shall pay to him or them fifty cents to the use of such city or town; and whoever neglects to so register shall be punished for each offence by a fine not exceeding twenty dollars.

[CHAPTER 58, LAWS OF 1891, AS AMENDED BY SECTION 6 OF CHAPTER 280 OF THE LAWS OF 1894.]

An Act to prevent deception in the manufacture and sale of imitation butter.

Be it enacted, etc., as follows:

SECTION 1. No person, by himself or his agents or servants, shall ~~render~~ or manufacture, sell, offer for sale, expose for sale, take orders for the future ~~delivery~~ of, or have in his possession with intent to sell, any article, product, or compound ~~made~~ wholly or partly out of any fat, oil, or oleaginous substance or compound thereof, ~~not produced~~ from unadulterated milk or cream from the same, which shall be in imitation of yellow butter produced from pure unadulterated milk or cream of the same: *provided*, that nothing in this act shall be construed to prohibit the manufacture or sale of oleomargarine in a separate and distinct form and in such manner as will advise the consumer of its real character, free from coloration or ingredient that causes it to look like butter.

SECT. 2. Whoever violates any of the provisions of section one of this act shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, or by imprisonment in the house of correction for a term not exceeding one year.

SECT. 3. Inspectors of milk shall institute complaints for the violation of the provisions of this act when they have reasonable cause to believe that any of its provisions have been violated; and on the information of any person who lays before them satisfactory evidence by which to sustain such complaint, said inspectors may enter all places where butter or imitations thereof are stored or kept for sale, and shall also take specimens of suspected butter and imitations thereof and cause them to be analyzed or otherwise satisfactorily tested, the result of which analysis or test they shall record and preserve as evidence; and a certificate of such result sworn to by the analyzer shall be admitted in evidence in all prosecutions under this act. The expense of such analysis or test, not exceeding twenty dollars in any one case, may be included in the costs of such prosecutions. Whoever hinders, obstructs, or in any way interferes with any inspector in the performance of his duty shall be punished by a fine of fifty dollars for the first offence and of one hundred dollars for each subsequent offence.

SECT. 4. This act shall not be construed to impair or prevent the prosecution and punishment of any violation of laws existing at the time of its ~~passage~~ and committed prior to its taking effect.

[CHAPTER 412, LAWS OF 1891, AS AMENDED BY CHAPTER 280 OF
THE LAWS OF 1894.]

An Act to provide for the protection of dairy products and to establish a
State dairy bureau.

Be it enacted, etc., as follows :

SECTION 1. Whoever, by himself or agents, sells or offers for sale, to any person who asks, sends, or inquires for butter, any oleomargarine, butterine, or any substance made in imitation of or semblance of pure butter, not made entirely from the milk of cows, with or without coloring matter, shall be declared guilty of fraud and punished by a fine of not less than one hundred dollars for each offence.

SECT. 2. Whoever exposes for sale oleomargarine, butterine, or any substance made in imitation or semblance of pure butter, not marked or distinguished by all the marks, words, and stamps required by existing laws, and not having in addition thereto upon the exposed contents of every opened tub, package, or parcel thereof, a conspicuous placard with the word "oleomargarine" printed thereon in plain, uncondensed Gothic letters, not less than one inch long, shall be fined not less than one hundred dollars for each offence.

SECT. 3. Whoever sells oleomargarine, butterine, or any other substance made in imitation or semblance of pure butter, from any dwelling, store, office, or public mart, shall have conspicuously posted thereon the placard or sign, in letters not less than four inches in length, "Oleomargarine sold here," or "Butterine sold here." Said placard to be approved by the bureau hereinafter provided for by this act. Any person neglecting or failing to post the placard herein provided for shall be punished by a fine of not less than one hundred dollars for the first offence and one hundred dollars for each day's neglect thereafter.

SECT. 4. Whoever by himself or agents peddles, sells, solicits orders for the future delivery of, or delivers from any cart, wagon, or other vehicle, oleomargarine, butterine, or any substance made in imitation or semblance of pure butter, not having on both sides of said cart, wagon, or other vehicle the placard, in uncondensed Gothic letters, not less than three inches in length, "Licensed to sell oleomargarine," shall be punished by a fine of not less than one hundred dollars or imprisonment for not less than thirty days for each offence.

SECT. 5. Whoever furnishes, or causes to be furnished, in any hotel, restaurant, or at any lunch counter, oleomargarine or butterine to any guest or patron of such hotel, restaurant, or lunch counter, in the place or stead of butter, shall notify said guest or patron that the substance so furnished is not butter, and any party so furnishing without such notice shall be punished by a fine of not less than ten nor more than fifty dollars for each offence.

SECT. 6. The governor, by and with the consent of the council, shall appoint an assistant to the secretary of the board of agriculture, at an annual salary of twelve hundred dollars, and expenses necessarily incurred in the discharge of his duties, to assist in the work prescribed in the eleventh section of this act. Said appointee shall hold office for

two years, or till his successor is appointed, unless sooner removed from office by the governor, and his successor shall be appointed as above provided for.

SECT. 7. In order to secure the better enforcement of the provisions of this act and to promote the improvement of the products of the dairy, the governor, by and with the advice and consent of the council, shall appoint three members of the board of agriculture, to constitute a dairy bureau of said board, one to serve for three years, one for two years, and one for one year, from the first day of July in the year eighteen hundred and ninety-one, or for such shorter terms respectively as they may continue to be members of said board of agriculture; and, prior to the first day of July in each succeeding year, the governor shall appoint from said board one member of said bureau to serve for three years or for such shorter term, as aforesaid. No person shall continue to be a member of said bureau after he has ceased to be a member of said board, but on his ceasing to be a member of said board, his place on said bureau shall be filled by the appointment of another member of said board, as aforesaid. The secretary of said board shall be the executive officer of said bureau, subject to its control and direction, and said secretary shall, upon assuming said duties, receive in addition to his present salary five hundred dollars per annum. The governor may at any time terminate the service of any member of said board as a member of said bureau, and may appoint any other member of said board in his place as above provided. Members of said bureau shall serve without pay, and shall have power to enforce all laws relating to dairy products and imitations thereof, and to employ such agents, assistants, experts, chemists, or counsel as may be necessary therefor. Said bureau, in the discharge of its duties, shall be subject to the general direction and control of the board of agriculture.

SECT. 8. The bureau may expend a sum not exceeding four thousand dollars in carrying forward the work of the bureau, and shall make annual reports in detail to the legislature, not later than the fifteenth day of January in each year, of the number of assistants, experts, chemists, agents, and counsel employed, and their expenses and disbursements, with such other information as shall be for the advantage of the dairy interest in the State, and they shall make full reports of all investigations made by them with all cases prosecuted, and the results of such prosecution. They shall make detailed statements of the said expenses to the auditor of the Commonwealth, on which payment shall be made to the extent of the appropriation.

SECT. 9. Said bureau, and such agents and counsel as they shall duly authorize for that purpose, shall have access, ingress, and egress to and from all places of business, factories, buildings, carriages, and cars used in the manufacture and sale of any dairy products, or imitation dairy products, and shall have access to all vessels and cans used in such manufacture and sale, and shall have all the authority given by law to the state board of health and any officer thereof, and to the milk inspectors, in the enforcement of all laws relating to dairy products or imitations thereof, and in the prosecutions of violations of said laws.

Whoever hinders, obstructs, or in any way interferes with an officer or duly authorized agent of the dairy bureau in the performance of his duty shall be punished by a fine of one hundred dollars for the first offence, and of two hundred dollars for each subsequent offence.

SECT. 10. The said bureau may work in unison with the state board of health, and with inspectors of milk, but they shall not restrict, limit, or interfere with the duties of said officers. Nothing herein contained shall be held to circumscribe the rights of said bureau in the prosecution of offenders of the so-called dairy laws, or all laws relating to milk, butter, cheese, or any adulterations or imitations thereof, wherever found within the Commonwealth.

SECT. 11. It shall be the duty of the said bureau to investigate all dairy products and imitation dairy products bought or sold within the Commonwealth; to enforce all laws for the manufacture, transfer, and sale of all dairy products and all imitation dairy products within the Commonwealth, with all the powers needed for the same; to investigate all methods of butter and cheese making in cheese factories or creameries, and to disseminate such information as shall be of service in producing a more uniform dairy product of higher grade and better quality.

SECT. 12. All fines recovered under this act shall be payable to the treasury of the Commonwealth.

LAWS OF MASSACHUSETTS

RELATIVE TO THE

INSPECTION AND SALE OF VINEGAR.

PUBLIC STATUTES. [CHAPTER 60, SECTION 69, AS AMENDED BY CHAPTER 257, ACTS OF 1883.]

SECTION 69. Every person who manufactures for sale, or offers or exposes for sale as cider-vinegar, any vinegar not the legitimate product of pure apple juice, known as apple cider, or vinegar not made exclusively of said apple cider, or vinegar into which foreign substances, drugs, or acids have been introduced, as may appear by proper tests, shall for each offence be punishable by fine of not less than fifty nor more than one hundred dollars.

SECT. 70. Every person who manufactures for sale, or offers for sale, any vinegar found upon proper tests to contain any preparation of lead, copper, sulphuric acid, or other ingredient injurious to health, shall for each such offence be punished by fine of not less than one hundred dollars.

SECT. 71. The mayor and aldermen of cities shall, and the selectmen of towns may, annually appoint one or more persons to be inspectors of vinegar, who shall be sworn before entering upon their duties:

[CHAPTER 307, ACTS OF 1884, AS AMENDED BY CHAPTER 150, ACTS OF 1885.]

SECTION 1. No person shall by himself, his servant or agent, or as the servant or agent of any other person, sell, exchange, deliver, or have in his custody or possession with intent to sell or exchange, or expose or offer for sale or exchange any adulterated vinegar, or label, brand, or sell as cider-vinegar, or as apple-vinegar, any vinegar not the legitimate product of pure apple juice, or not made exclusively from apple cider.

SECT. 2. All vinegars shall be without artificial coloring-matter, and shall have an acidity equivalent to the presence of not less than four and one-half per cent. by weight of absolute acetic acid, and in the case of cider-vinegar shall contain in addition not less than two per cent. by weight of cider-vinegar solids upon full evaporation over boiling water; and if any vinegar contains any artificial coloring-matter or less than the above amount of acidity, or, in the case of cider-vinegar, if it contains less than the above amount of acidity or of cider-vinegar solids, it shall be deemed to be adulterated within the meaning of this act.

SECT. 4. Whoever violates any of the provisions of this act shall be punished by fine not exceeding one hundred dollars.

DECISIONS OF THE SUPREME COURT OF THE
UNITED STATES, AND OF THE SUPREME JUDICIAL
COURT OF MASSACHUSETTS, RELATIVE TO THE
LAWS OF MASSACHUSETTS GOVERNING THE
INSPECTION AND SALE OF MILK AND OF OLEO-
MARGARINE.

SUPREME COURT OF THE UNITED STATES.

No. 406. — OCTOBER TERM, 1894.

BENJAMIN A. PLUMLEY, Plaintiff in Error, *vs.* THE COMMONWEALTH
OF MASSACHUSETTS.

In error to the Supreme Judicial Court of the Commonwealth of
Massachusetts.

The act of August 2, 1886, Chap. 840, 24 Stat. 209, does not give authority to those who pay the taxes prescribed by it to engage in the manufacture or sale of oleomargarine in any State which lawfully forbids such manufacture or sale, or to disregard any regulations which a State may lawfully prescribe in reference to that article; and that act was not intended to be, and is not, a regulation of commerce among the States.

The Statute of Massachusetts of March 10, 1891, Chap. 58, "to prevent

deception in the manufacture and sale of imitation butter," in its application to the sales of oleomargarine artificially colored so as to cause it to look like yellow butter and brought into Massachusetts, is not in conflict with the clause of the Constitution of the United States investing Congress with power to regulate commerce among the several States.

Leisy v. Hardin, 135 U.S. 100, 124, is restrained in its application, the case there actually presented for determination and held not to justify the broad contention that a State is powerless to prevent the sale of articles of food manufactured in or brought from another State, and subjects of traffic or commerce, if their sale may cheat the people into purchasing something they do not intend to buy, and which is wholly different from what its condition and appearance import.

The judiciary of the United States should not strike down a legislative enactment of a State, especially if it has direct connection with the social order, the health and the morals of its people, unless such legislation plainly and palpably violates some right granted or secured by the National Constitution, or encroaches upon the authority delegated to the United States for the attainment of objects of national concern.

United States Reports, 155, p. 461.

DECISIONS OF THE SUPREME JUDICIAL COURT OF MASSACHUSETTS.

Pub. Stats., Chap. 57, Sect. 2, so far as it authorizes inspectors of milk to enter all carriages used in the conveyance of milk, and, whenever they have reason to believe any milk found therein is adulterated, to take specimens thereof for the purpose of analyzing or otherwise satisfactorily testing the same, is constitutional.

Commonwealth v. Carter, 132 Mass. 12.

1. A person may be convicted of selling adulterated milk, under Pub. Stats., Chap. 57, Sect. 5 (Gen. Stats., Chap. 49, Sect. 151), although he did not know it to be adulterated; and an averment in the indictment that he has such knowledge may be rejected as surplusage.

2. It is not necessary in such indictment to aver that the milk was cow's milk.

3. An indictment alleging a sale of adulterated milk to a woman is not defeated by proof that she was married and was acting as agent for her husband, if the seller had no notice, express or implied, of these facts.

4. An indictment under Pub. Stats., Chap. 57, Sect. 5 (Gen. Stats., Chap. 49, Sect. 151), which charges that the defendant sold a certain quantity of "adulterated milk, to which a large quantity—that is to say, four quarts—of water had been added," is not bad for duplicity.

Commonwealth v. Farren, 9 Allen, 489.

1. An indictment which alleges that the defendant "did unlawfully keep, offer for sale, and sell" adulterated milk charges but one offence.

2. In support of such indictment, one who in a great many instances has used a lactometer for the purpose of testing the quality and the purity of milk may testify to the result of an experiment made by him with the same lactometer upon the milk in question, although no evidence is offered as to the character of the instrument.

Commonwealth v. Nichols, 10 Allen, 199.

At the trial of an indictment on Pub. Stats., Chap. 57, Sect. 5 (Statute of 1868, Chap. 263), for selling "adulterated milk, there was evidence that the defendant [who was a son of the owner of a milk route], with a companion who was in the same employment with himself, knowingly adulterated milk on its way for distribution to his father's customers, and then having charge, with his companion, of its distribution from the wagon on which it was conveyed upon the route, caused a can of it to be delivered to one of the customers by the hand of his companion. *Held*, that he had no ground of exception to instructions to the jury; that in the absence of proof of any previous contract to supply milk to the customer, the delivery might be deemed an act of sale; nor to an instruction framed on a supposition that the jury might find that he was in the employment of his father, although there was no averment in the indictment to that effect."

Commonwealth v. Haynes, 107 Mass. 194.

A person may be convicted of selling adulterated milk, upon a complaint under Pub. Stats., Chap. 57, Sect. 5 (Statute of 1880, Chap. 209, Sect. 3), without allegation or proof that he knew it to be adulterated.

Commonwealth v. Evans, 133 Mass. 11.

A complaint, under Pub. Stats., Chap. 57, Sect. 5, alleging that the defendant, at a time and place named, had in his possession a certain quantity, to wit, one pint, of adulterated milk, containing less than thirteen per cent. of milk solids, with intent then and there unlawfully to sell the same, is sufficient, without further alleging that the milk was analyzed and found on analysis to contain less than thirteen per cent. of milk solids. At the trial of a complaint, under Pub. Stats., Chap. 57, Sect. 5, alleging that the defendant had in his possession adulterated milk, to wit, milk containing less than thirteen per cent. of milk solids, with intent to sell the same, it is immaterial in what manner the quantity of milk solids has been reduced below thirteen per cent. if the intent is to sell the milk as pure milk, and not as skimmed milk.

Commonwealth v. Bowers, 140 Mass. 483.

Pub. Stats., Chap. 57, Sect. 9 (Statute of 1880, Chap. 209, Sect. 8), providing that "in all prosecutions under this act," for selling adulterated milk, "if the milk shall be shown upon analysis to contain more than eighty-seven per centum of watery fluid, or to contain less than

thirteen per centum of milk solids, it shall be deemed for the purpose of this act to be adulterated," is constitutional.

Commonwealth v. Evans, 132 Mass. 11.

A complaint, under the Pub. Stat., Chap. 57, Sects. 5, 9, alleging that the defendant, at a time and place named, had in his custody and possession a certain quantity, to wit, one pint, of adulterated milk, to wit, milk then and there containing less than thirteen per cent. of milk solids, with intent then and there unlawfully to sell the same, is sufficient.

Commonwealth v. Keenan, 139 Mass. 193.

A complaint, under the Pub. Stat., Chap. 57, Sect. 5, alleging in one count that the defendant, at a time and place named, sold a certain quantity, to wit, one pint, of adulterated milk, to wit, milk containing less than thirteen per cent. of milk solids, and in another count alleging that the defendant, at the same time and place, had in his possession a certain quantity, to wit, one pint, of adulterated milk, to wit, milk containing less than thirteen per cent. of milk solids, with intent then and there unlawfully to sell the same, is sufficient, without further alleging that the milk was analyzed and found on analysis to contain less than thirteen per cent. of milk solids.

The Pub. Stats., Chap. 57, Sect. 10, do not prohibit any person not an inspector of milk from making a complaint for a violation of the provisions of the chapter.

A complaint, under the Pub. Stats., Chap. 57, Sect. 5, alleging that the defendant sold one pint of adulterated milk, to wit, milk containing less than thirteen per cent. of milk solids, is not supported by proof that he sold the milk as skimmed milk out of a tank marked as required by Sect. 7, although the milk was watered.

A complaint, under Pub. Stat., Chap. 57, Sect. 5, alleging a sale of adulterated milk, to wit, milk containing less than thirteen per cent. of milk solids, is supported by proof of a sale of milk which, by the removal of a part of the cream, has been reduced in solids below thirteen per cent., unless the milk was sold as skimmed milk, and out of a vessel, can, or package marked as required by Sect. 7; and it is not necessary that a complaint charging such an offence should be drawn under Sect. 6.

Commonwealth v. Tobias, 141 Mass. 129.

At the trial of an indictment on Pub. Stat., Chap. 57, Sect. 5, charging the defendant with having adulterated milk in his possession, with intent unlawfully to sell the same, an analyst in the employ of the inspector of milk may testify to the result of his analysis of the milk taken from the defendant from memory, using a memorandum made by him at the time of analysis to refresh his memory, without further proof that the requirements of the Pub. Stats., Chap. 57, Sect. 2, as amended by the Statute of 1884, Chap. 310, Sect. 3, have been complied with.

Commonwealth v. Spear, 143 Mass. 172.

At a trial of an indictment on the Pub. Stats., Sect. 5, charging the defendant with having adulterated milk in his possession, with intent to unlawfully sell the same, an analyst in the employ of the inspector of milk, who analyzed the milk taken from the defendant, testified that he reserved a portion of the milk so taken, by putting it into a bottle; which he corked and sealed. A chemist, to whom the analyst delivered the portion of milk so reserved, testified, for the defendant, that the bottle was not sealed. The defendant asked the judge to rule that, if the bottle was corked only, it was not a compliance with the requirement of the Statute of 1884, Chap. 310, Sect. 4, as to the sealing of such reserved portion. The judge declined so to rule, and instructed the jury that they might consider the evidence as bearing upon the credibility of the government witness.

Held, that the defendant had no ground of exception.

If, at the trial of an indictment on the Pub. Stats., Chap. 57, Sect. 5, charging the defendant with having adulterated milk in his possession, with intent to unlawfully sell the same, an analyst in the employ of the inspector of milk of a city testifies that he added, for the purpose of preserving it, a few drops of carbolic acid to the sample reserved from milk delivered to him for analysis, it is a question of fact for the jury whether the reservation of the sample was in accordance with the requirement of the Stat. of 1884, Chap. 310, Sect. 4.

Commonwealth v. Spear, 143 Mass. 172.

At the trial of a complaint, under Pub. Stats., Chap. 57, Sect. 5, alleging that the defendant had in his possession adulterated milk, with intent unlawfully to sell the same, the evidence showed that a wagon with the defendant's name and number on it was standing upon a public street in a city at an early hour in the morning; that the defendant's servant was on the wagon, and there were several eight-quart cans in the wagon; that a collector of samples in the employ of the inspector of milk for the city took a sample of milk from one of the cans, which was not marked "skimmed milk," and that an analysis of the milk taken showed that it was below the legal standard.

Held, that there was evidence of an intent on the part of the defendant to sell the milk, which was properly submitted to the jury.

Commonwealth v. Smith, 143 Mass. 169.

A complaint on the Stat. of 1886, Chap. 318, Sect. 2, alleging that on the first day of July, 1886, the defendant had in his possession "one pint of milk not of good standard quality, that is to say, milk containing less than thirteen per cent. of milk solids, with intent then and there unlawfully to sell the same within this Commonwealth," is sufficient, without negating the exception of the months of May and June.

The Stat. of 1885, Chap. 352, Sect. 6, provides that Sect. 9 of the Pub. Stats., Chap. 57 (which relates to the sale of adulterated milk), "is hereby amended so as to read as follows." The Stat. of 1886, Chap. 318, Sect. 2, provides that Sect. 9 of the Pub. Stats., Chap. 57, "is hereby amended so as to read as follows." In each section after the

words quoted, there follows a sentence which covers the whole subject of the original section.

Held, that the Stat. of 1886, Chap. 318, Sect. 2, was a valid enactment.

The Stat. of 1884, Chap. 310, Sect. 4, providing for the reservation and sealing, before commencing the analysis, of a portion of the sample of milk taken for analysis, is impliedly repealed by the Stat. of 1886, Chap. 318, Sects. 1 and 3.

Commonwealth v. Kenneson, 143 Mass. 418.

The Stat. of 1885, Chap. 352, Sect. 8, provides that no person shall sell, or have in his possession with intent to sell, skimmed milk below a certain standard, and enacts that whoever violates the provisions of this section shall be punished by the penalties provided in the Pub. Stats., Chap. 57, Sect. 5.

Held, on a complaint made under the Stat. of 1885, Chap. 352, Sect. 8, for an offence committed after the Stat. of 1886, Chap. 318, Sect. 2, took effect, that, even if the last-named statute repealed by implication the Pub. Stats., Chap. 57, Sect. 5, the complaint could be maintained.

Commonwealth v. Kendall, 144 Mass. 357.

Placing wax upon the top of the cork in a bottle containing a portion reserved from a sample of milk taken for analysis, and not extending the wax over the mouth of the bottle and thus rendering the bottle airtight, is not a sufficient compliance with the requirement of the Stat. of 1884, Chap. 310, Sect. 4, that such reserved portion shall be "sealed."

Commonwealth v. Lockhardt, 144 Mass. 132.

An indictment on the Stat. of 1886, Chap. 318, Sect. 2, alleging that the defendant had in his "possession milk to which a certain foreign substance had been added, to wit, annatto coloring-matter," with intent unlawfully to sell the same, is sufficient without naming the quantity.

Evidence offered at the trial of such an indictment as to two samples of milk taken from the defendant's possession at substantially the same time is competent, and the government cannot be required at the same time of the offer, if ever, to elect which sample it will rely on.

The addition of the annatto coloring-matter, whether injurious to health or not, is punishable under the statute.

Evidence that the "milk was of low grade" is competent, although it may tend to prove another offence.

Commonwealth v. Schaffner, 146 Mass. 512.

An averment in a complaint under the milk acts, that the defendants were "partners," is mere surplusage, and need not be proved.

On such a complaint, evidence that the defendant was on a wagon with a license number on it and containing milk cans, from one of which was taken adulterated milk, is competent on the issue that he was in possession of the milk to sell it.

Commonwealth v. Rowell, 146 Mass. 128.

On a complaint for the sale of milk not of good standard quality, evidence that the milk was delivered under a special contract is immaterial.

If a buyer of milk takes a portion to a milk inspector, the latter may testify on the trial of such a complaint as to the results of his analysis.

Commonwealth v. Holt, 146 Mass. 38.

Oleomargarine was exposed for sale in the original package; namely, a tub, the top of the cover of which had been duly marked, as well as the side and bottom, but from which the cover had been removed, disclosing the superficial surface of the oleomargarine without any mark.

Held, that the terms of the Stat. of 1886, Chap. 317, Sect. 1, had been complied with.

Commonwealth v. Bean, 148 Mass. 172.

At the trial of a complaint, on the Stat. of 1886, Chap. 318, Sect. 2, for selling milk not of the standard quality, there being evidence that the milk was skimmed milk, and sold from a measure duly marked, the jury were instructed that the defendant would be liable unless he sold the milk not as pure milk, but as skimmed milk, and further, that he would be liable unless the buyer had notice or knowledge that the milk was skimmed milk.

Held, that the instruction was erroneous.

Commonwealth v. Smith, 149 Mass. 9.

A complaint on the Stats. of 1886, Chap. 317, Sect. 1, charging the defendant with selling imitation butter at retail without a descriptive wrapper, need not allege that the sale was actually made by the defendant's agent.

At the trial of such a complaint there was evidence that the sale was made by the defendant's agent, acting within the scope of his employment, and that he was supplied with wrappers properly marked for covering the article sold; and the presiding judge refused to instruct the jury, as requested by the defendant, that if the agent's failure to use the wrappers was the result of inadvertence on his part, and not intentional, the jury would not be justified in convicting the defendant.

Held, that the defendant had no ground of exception.

Commonwealth v. Gray, 150 Mass. 327.

Under the Pub. Stats., Chap. 57, Sect. 5, as amended by the Stats. of 1886, Chap. 318, Sect. 2, relating to the adulteration of "milk," it is equally an offence to have in one's possession skimmed milk containing a foreign substance with intent unlawfully to sell the same.

Commonwealth v. Wetherbee, 155 Mass.

The provisions of Sect. 2, Chap. 318, Stat. of 1886, apply to the keeper of a hotel who supplies milk to his guests to be drunk by them on the premises.

A principal is responsible under the statute for a sale made by his

servant, although he was not present and did not consent to or know of the particular sale, the servant not acting in violation of orders.

Commonwealth v. Vieth, 155 Mass.

Upon a writ of habeas corpus, the court will not ordinarily consider questions arising in a criminal case which might be brought up by a bill of exceptions; but under special circumstances such questions were entertained, the court saying that, with reference to the mode of procedure, the case was not to be deemed a precedent for future cases.

The Stat. of 1891, Chap. 58, which makes a distinction between oleomargarine which is an imitation of yellow butter and that which is not, and which statute is directed only towards oleomargarine of the former class, is not repealed by the Stat. of 1891, Chap. 412, Sect. 1, which is directed to the distinct fraud of selling or offering to persons calling for butter something besides butter.

The fact that two statutes, similar in their nature and purpose, were both passed at the same session of the Legislature, and took effect on the same day, is strong evidence that they were intended to stand together.

The enactment of a statute which forbids the manufacture and sale of oleomargarine which is made in imitation of yellow butter, though such oleomargarine has been imported from another State, is a valid exercise of the police power which remains in the several States, and it is not in violation of the constitutional provision giving to Congress the power to regulate commerce among the several States. Knowlton and Lathrop, JJ., dissenting.

Commonwealth v. Huntley.

Commonwealth v. Plumley, 156 Mass. 236.

On a complaint under the Stat. of 1886, Chap. 317, Sect. 1, charging the defendant with having in his possession, with intent to sell, oleomargarine in a tub not marked as required by that section, the exceptions recited that the tub "was not, on the date of the offence alleged in the complaint, exposed for sale, nor was it so situated that it could be seen by customers of the defendant," and that it also appeared "that the defendant had bought said package for the purpose and with the intention of selling the said oleomargarine contained therein at retail in said store, but that he did not intend to sell the oleomargarine contained in this tub, or expose the same for sale, until the marks had been examined, and if not marked in accordance with law, to mark the tub before opening the same."

Held, that these facts showed that the defendant had no intention of selling the oleomargarine in the form in which it was, but was storing it with the intention of properly marking the package, if it was not already properly marked, before he offered the oleomargarine for sale or intended to sell it, and that the jury were not warranted in finding the defendant guilty.

Because of the absolute prohibition against selling intoxicating liquor without a license, the intent to sell may be often inferred from facts

which would not warrant the inference of an intent to sell other merchandise in the form in which it was found, when the person having it in his possession had a right to sell it, if it was properly marked, and had the right to so mark it after receiving it, and before he exposed it for sale or intended to sell it.

Commonwealth v. Mills, 157 Mass. 405.

If a complaint charges a person with having in his possession, with intent to sell, oleomargarine in a tub not marked as required by law, he cannot be convicted, if the exceptions show that he had no intent to sell it without having it so marked.

It is not to be inferred that the Legislature, merely by making it the duty of certain officers to enforce penal laws of general application, intended that the enforcement should be dependent upon these officers, and a complaint charging a person with having in his possession, with intent to sell, oleomargarine contrary to the requirements of the Stat. of 1886, Chap. 317, Sect. 1, is not defective because made by an inspector of the State board of health, instead of by an inspector of milk, or by the treasurer of the town in which the offence was committed.

Commonwealth v. McDonnell, 157 Mass. 407.

The fact that a collector of samples of milk, who was not acting under the authority of the Stat. of 1886, Chap. 318, made a purchase of milk in a restaurant and retained a portion thereof for analysis without disclosing that he was such a collector, and without giving to the person from whom it was purchased an opportunity to ask for a sealed sample, will not render evidence incompetent to show that the milk so purchased was below the legal standard.

Commonwealth v. Coleman, 157 Mass. 460.

If a person has for sale in his shop oleomargarine colored in imitation of yellow butter which is kept in a closed and covered refrigerator and cannot be seen by customers, although he has a sign in his shop to the effect that oleomargarine is sold there, he does not "expose for sale" such oleomargarine within the meaning of the Stat. of 1891, Chap. 58, Sect. 1.

Commonwealth v. Byrnes, 158 Mass. 172.

A complaint under the Stat. of 1891, Chap. 412, Sect. 4, for selling oleomargarine from a wagon, at a time and place named, the defendant "not having then and there on both sides of said vehicle the placard, in uncondensed Gothic letters not less than three inches in length, 'Licensed to sell oleomargarine,'" is supported by proof that the defendant's wagon was a covered one with the front and rear ends open; that on the inside of the cover on each side was a placard, in form and size such as the statute requires; that these placards could be seen from the front and rear of the wagon, but could not be seen from the sides thereof, and that there were no placards on the outer sides of the wagon.

At the trial of a complaint under the Stat. of 1891, Chap. 412, Sect. 4,

for selling oleomargarine from a wagon at a time and place named, the defendant "not having then and there on both sides of said vehicle the placard, in uncondensed Gothic letters not less than three inches in length, 'Licensed to sell oleomargarine,'" the defendant has no ground of exception to the refusal of the judge to rule that this section of the statute "is in conflict with the act of Congress of August 2, 1886, and the rules and regulations of the commissioner of internal revenue thereunder, and is therefore unconstitutional and void."

Commonwealth v. Crane, 158 Mass. 218.

A complaint under Pub. Stats., Chap. 57, Sect. 5, charging the defendant with having in his possession, with intent to sell, milk to which a foreign substance had been added, is sustained by proof of possession, with that intent, of cream to which boracic acid had been added.

A complaint under Pub. Stats., Chap. 57, Sect. 5, charging the defendant with having in his possession, with intent to sell, milk to which a foreign substance had been added, was heard on an "agreed statement of facts," which was not a case stated in writing and filed, but an admission of facts from which the jury were at liberty to draw inferences.

Held, that the jury might infer the offence charged from a sale by the defendant from his restaurant.

Commonwealth v. Gordon, 159 Mass. 8.

The proprietor of a restaurant furnished oleomargarine to a guest in the place of butter. There were signs in conspicuous places in the restaurant bearing the words "Butterine Only Used Here," and on the tables were bills of fare on which were printed the words "Only Fine Butterine Used Here." The guest saw neither of the signs and did not examine the bill of fare; and no oral notice was given to him that the substance furnished to him was not butter. *Held*, that the proprietor of the restaurant could be convicted of an offence under the Stat. of 1891, Chap. 412, Sect. 5.

Commonwealth v. Stewart, 159 Mass. 113.

A person may be convicted of violating Stat. 1886, Chap. 318, Sect. 2, whose servant, in the course of his employment, makes an inadvertent sale of milk "not of good standard quality." If milk is ordered by and delivered to a customer in a hotel as a part of his breakfast, for which he pays a round sum, it is a sale of the milk which, if the milk is "not of good standard quality," will support a complaint on Stat. 1886, Chap. 318, Sect. 2.

Commonwealth v. Warren, 160 Mass. 533.

The Stat. of 1891, Chap. 58, Sect. 1, entitled "An Act to prevent deception in the manufacture and sale of imitation butter," forbids the exposing for sale of oleomargarine colored to look like butter, and it is immaterial whether the particular purchaser was advised of its real character or not.

Commonwealth v. Russell, 162 Mass. 520.

The Stat. 1891, Chap. 412, Sect. 4, was not intended to draw fine distinctions between different kinds of oleomargarine, all of which would resemble butter; but it requires that every one who delivers oleomargarine, of whatever sort, from a vehicle upon the public streets, shall carry along with him upon his vehicle a public notice that he is licensed to sell oleomargarine.

Commonwealth v. Crane, 162 Mass. 506.

Oleomargarine artificially colored by annatto so as to cause it to look like yellow butter produced from pure unadulterated milk, or cream from the same, is within the prohibition of Stat. of 1891, Chap. 58, Sect. 1, which statute has not been repealed, and is constitutional and valid as applied to oleomargarine so colored.

Commonwealth v. Kelly, 163 Mass. 169.

REPORT OF THE INSPECTOR OF PROVISIONS.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report for the year ending December 31, 1895:

Total number of packages seized and condemned, 3,726

MEATS.

Veal, immature	.	.	.	.	.	1,743 lbs.
Veal, tainted	.	.	.	.	.	5,837 "
Lamb, "	.	.	.	.	.	1,121 "
Bear	.	.	.	.	.	300 "
Pork	.	.	.	.	.	700 "
Sausage	.	.	.	.	.	100 "
Calves' heads	.	.	.	.	.	8
Rabbits	.	.	.	.	.	250
Livers	.	.	.	.	.	84
Poultry	.	.	.	.	.	4,389 lbs.

FISH.

Herring	.	.	.	.	.	3,850 lbs.
Smelts	.	.	.	.	.	280 "
Mackerel	.	.	.	.	.	140 "
Codfish	.	.	.	.	.	47 bbls.
Lobsters	.	.	.	.	.	2 "
Clams	.	.	.	.	.	1 "
Oysters	.	.	.	.	.	3 "
Oysters	.	.	.	.	.	306 gals.

FRUITS AND VEGETABLES.

Apples	.	.	.	.	.	18 bbls.
Beans	.	.	.	.	.	400 baskets.
Blackberries	.	.	.	.	.	320 qts.

Cabbages	63 bbls.
Cantaloupes	188 "
Cocoanuts	5 "
Cucumbers	40 crates.
Corn, green	41 "
Egg-plant	29 bbls.
Oranges	26 boxes.
Peaches	74 baskets.
Pears	40 bbls.
Peas	1 crate.
Plums	23 baskets.
Potatoes	315 bushels.
Radishes	5 bbls.
Rhubarb	1 box.
Squash	35 crates.
Strawberries	1,472 qts.
Tomatoes	75 crates.
Turnips	4 bbls.
Watermelons	15,317

GROCERIES.

Asparagus	24 cans.
Boiled dinner	80 "
Catsup	180 bottles.
Cocoa shells	18 pkges.
Evaporated apples	25 "
Ginger-snaps	1½ bbls.
Herring	142 cans.
Jam	8 jars.
Lobster	288 cans.
Lobster paste	282 "
Maple sugar	3 boxes.
Pie meat	24 pkges.
Raisins	350 lbs.
Radish	23 bottles.
Sardines	110 cans.
Tapioca	15 pkges.
Tobacco	1 bbl.
White-fish	24 cans.

All money due for condemned meats, amounting to

\$31.73, has been collected, distributed, and receipts taken therefor, according to law.

CANNED GOODS.

The inspection of canning factories has been given close attention, and a careful investigation made of the class and quality of materials used.

In every case factories have been found to be well located, well ventilated, and especially adapted for canning purposes; and cleanliness has been the rule in nearly every establishment.

The fish, meats, and vegetables which are being put up in the canning factories in the city of Boston to-day are all that can be desired, and will so continue if the purchasing agents for the factories observe the admonition of the Board of Health that the use of none but good materials will be allowed.

Following is a list of canning factories in the city of Boston :

Anderson Company . . .	127 State street.
Amsby, J. K., & Co. . .	8 Commercial street. .
Baily, A., & Co. . . .	176 Atlantic avenue.
Cowdrey, E. T., & Co. .	44 South Market street.
Dana, Thomas	7 Chamber of Commerce.
Fairbanks Company . .	43 Commercial wharf.
Hatheway, G. F. . . .	3 Central wharf.
Huckins, J. H. W., & Co. .	18 Waterford street.
Lewis Bros.	81 Broad street.
Loggie Packing Company .	176 Atlantic avenue.
Plummer, J. P. & D. . .	9 Blackstone street.
Potter, Wrightington, & Co.	New street, East Boston.
Twitchel, Complin, & Co. .	41 Sudbury street.
Underwood & Co. . . .	52 Fulton Street.

In one instance my attention was called to a small lot of butter which had every appearance of being of the first quality, except that on the surface there were numerous red spots or stains from a quarter to a half inch in diameter, and penetrating to a moderate depth. A specimen was

shown to the Board of Health and referred to the State Board of Health for examination. A report of the examination, by Dr. Theobald Smithe, Pathologist to the State Board, showed the colored spots to be a pigment caused by the growth of bacteria.

REMARKS.

Upon assuming the duties of Inspector of Provisions, I discovered that, in many cases, the dealers in provisions were not fully conversant with the laws relating to the provision business; therefore, with the advice and consent of your Honorable Board I caused to be printed and distributed the following:

CITY OF BOSTON.

HEALTH DEPARTMENT.

The following extracts from the Public Statutes are published by the Board of Health for the information and guidance of persons engaged in the business of selling provisions:

(Extracts from Chapter 58 of the Public Statutes.)

SECTION 5. Whoever knowingly sells, or offers or exposes for sale, or has in his possession with intent to sell for food, any diseased animal, or any tainted, diseased, corrupted, decayed or unwholesome meat, fish, vegetables, produce, fruit or provisions of any kind whatever, shall be punished by imprisonment in jail for not more than sixty days, or by fine of not more than one hundred dollars.

SECT. 6. The place where property condemned under this charter is found, and the name of every person in whose possession it is found, and of every person convicted of an offence under the preceding section, shall be published in two newspapers published in the county in which the property was found or the conviction took place.

I am pleased to report that this action has produced very satisfactory results.

The agents of steamship and railroad lines have shown a general desire to assist in every way in the prevention of transportation to the Boston market of provisions of an inferior quality.

Respectfully submitted,

JOHN C. GROUSE,

Inspector.

NORTH GROVE-STREET MORGUE.

BOSTON, January 1, 1896.*To the Board of Health:*

GENTLEMEN: I have the honor to report for the year ending December 31, 1895. There were received at the City Morgue, No. Grove street, one hundred and nineteen bodies of persons deceased, of which number thirty-five were unidentified at time of reception, and sixteen were subsequently identified. There were made, by the Medical Examiner and his Associate, forty-nine autopsies, at which I assisted.

The building will need some slight repairs the coming year to place it in proper condition.

I have the honor to be,

Very respectfully,

F. L. BRIGGS,
Supt. of City Morgue.

REPORT OF INSPECTOR OF ANIMALS.

BOSTON, January 1, 1896.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report of the inspection of animals and dressed meat at the Brighton Abattoir, and animals kept for the production of milk within the city, for the year ending December 31, 1895:

ANIMALS KILLED AT ABATTOIR.

Cattle	25,814
Calves	14,141
Sheep	77,906
Swine	470

ANIMALS CONDEMNED.

	Number.	Weight.
Cows	52	22,864 lbs.
Steers	2	1,540 "
Bulls	1	630 "
Calves	9	372 "
Sheep	1	30 "
Parts of animals		4,000 "
Total	65	29,436 lbs.

"Parts of animals," in the above table, refers to animals where only a part of the same was condemned, the unmarkable portions being confined to the parts about the lesion, which in these cases is simply of a local condition, as a liver, heart, tongue, and fore or hind quarter of an injured or bruised animal.

Diseases found among animals after having been killed and dressed at the abattoir :

DISEASES.	Cattle.	Calves.	Sheep.
Tuberculosis	49		
Actinomycosis	7		
Septicæmia	2	.....	1
Puerperal fever	2		
Bruised	1		
Immatured . . . . .	.....	9	
Total	61	9	1

Animals received dead from the stock-yards to be dressed for food :

ANIMALS.	Number Received.	Number Condemned.	Weight.
Cows	9	2	786 lbs.
Bulls	12		
Steers	15	2	1,540 lbs.
Total	36	4	2,326 lbs.

The above table refers to animals arriving at the different stock-yards, which, from injury during transportation, or from what was supposed to be a slight and not dangerous illness, were unable to walk to the abattoir. These were shot at the yards and carted to the abattoir in the ambulance.

The following table shows the conditions found, and the reasons for killing such animals as were carted to the abattoir from the stock-yards :

ANIMALS.	Septicæ- mia.	Puerperal Fever.	Laminitis.	Injuries.	Wild.	Heat- stroke.
Cows . . . . .	.....	2	1	2	.....	4
Bulls . . . . .	.....	.....	3	5	.....	4
Steers	2	.....	2	8	3	
Total	2	2	6	15	3	8

TUBERCULOSIS.

The following table shows the percentage of tuberculosis in cattle killed at abattoir with the intention of being used for food :

CLASS OF ANIMALS.	Number Received.	Tubercu- losis.	Percentage.
Whole number of all kinds	25,814	49	0.189
Cows from Eastern States	1,949	47	2.41
Bulls from Eastern States	157	1	0.63
Steers from Eastern States			
Cows from Buffalo	536	1	0.18
Cows from Western States	1,421		
Steers from Western States			

Under the head of "Cows from Eastern States" is understood those animals from all of the New England States including Massachusetts.

In accordance with regulations of State Board of Cattle Commissioners, monthly reports of the abattoir have been made to that Board.

During the past year the examination of cattle arriving at the Brighton stock-yards has been under the control of the State Board of Cattle Commissioners, the local Board of Health taking no part in these examinations. During the

first part of this year these examinations consisted in subjecting all animals offered for sale, as milch cows, to the tuberculin test.

Animals intended for slaughter were released for immediate slaughter at the abattoir.

Later, this examination consisted in testing only such animals, coming from without this State, as could show no certificate of recent test by recognized veterinarians.

All animals coming from other States, accompanied by certificate of recent tuberculin test, were at once released.

All animals which were pronounced tuberculous upon this test by the State Board of Cattle Commissioners were sent to the dead-house of the abattoir, and there a post-mortem examination made upon them. During the first part of this year animals which were released by the tuberculin test were branded upon the right hip with the Commonwealth seal, which was an indication that such animals were free from tuberculosis.

The following table shows the result of the post-mortem examinations at the abattoir upon such animals as were condemned for tuberculosis at the stock-yards by the State Board of Cattle Commissioners after the tuberculin test :

ANIMALS.	Number Killed.	Number Tuberculous.	Number not Tuberculous.	Percentage not Tuberculous.
Cows	159	143	16	
Bulls	5	3	2	
Steers	2	1	1	
Total	166	147	19	11.40

The following table shows the result of the examination of animals sent to the abattoir to be slaughtered for beef, after having been tested with tuberculin and pronounced free from tuberculosis, and the Commonwealth seal branded upon the right hip :

ANIMALS.	Number Killed.	Number Tuberculous.	Percentage Tuberculous.
Cows	82	8	
Total	82	8	9.75

INSPECTION OF CATTLE.

In accordance with the regulations of the Board of Health and an act of the Legislature, the work of inspection of cows kept for the production of milk has been continued during the past year. With one or two exceptions all cattle which upon inspection have shown any symptoms of tuberculosis have been subjected to the tuberculin test, and all animals which have shown a reaction to such test have been quarantined, and the State Board of Cattle Commissioners notified.

A few cows, upon physical examination, have shown well-marked lesions of tuberculosis, and have been at once quarantined. In such cases the tuberculin test has not been applied, as it seemed superfluous and unnecessary.

A few requests have been made to this office asking for the tuberculin test, which in all cases have been from owners of private animals. These tests have been made in all cases, depending upon the amount of time and work of office.

As a result of this inspection of animals within the city limits twenty cows and one bull have been quarantined as tuberculous animals, and the State Board of Cattle Commissioners at once notified.

GLANDERS.

There have been reported to this office forty-nine horses under suspicion of having glanders or farcy. Of these, fourteen have been reported by the attending veterinarian as having been killed and disposed of at once by his advice.

Of the remaining thirty-five animals, eight upon examination proved to have some other disease. All cases which

proved to have glanders or farcy were reported at once to the Board of Cattle Commissioners.

Upon the killing of glandered animals the premises from which such animals have been removed have been thoroughly disinfected by the Board of Health, and other animals in the same stable carefully examined.

The delay in securing the ultimate disposition of these diseased and worthless animals and the cleansing of the stables for the use of the other animals is in wide contrast with the practice some years ago, when the matter was in charge of the Board of Health.

Respectfully submitted,

ALEXANDER BURR, M.D.V.,

Inspector and Veterinarian.

REPORT OF SUPERINTENDENT OF PEDLERS.

OFFICE OF THE SUPERINTENDENT OF PEDLERS,

February 1, 1896.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report of the work performed by this branch of the Health Department for the year ending January 31, 1896:

No change has been made in the method of granting licenses, or assigning numbers by the Board of Health. The name and number of each pedler must be plainly painted on the wagon, and the vehicles and receptacles kept clean.

The pedlers are better regulated, and the condition of their vehicles and receptacles shows a marked improvement. The men engaged in the business are more willing to comply with the laws and ordinances than formerly. There are pedlers who still persist in violating the law and ordinances, against ninety-one of whom complaints have been entered. They were all convicted, and paid fines amounting to \$494.

The City Collector received the past year \$4,968 for licenses granted by the Secretary of State, \$468 of which was paid into the county treasury and \$4,500 into the city treasury.

The license fees paid into the city treasury for 1895-6 were \$4,500, compared with \$3,525 in 1894-5 and \$1,450 in 1893-4. These figures show that more pedlers are complying with the law, and that the interests of the city are better protected under more careful supervision. We have a smaller number of pedlers in this city now compared with previous years. This is due to the fact that the unlicensed pedlers are going into other lines of business.

The depots for the distribution of house-offal at Roxbury, at the South End, and at Charlestown have been visited once each week. The vehicles and receptacles used by farmers

for the transportation of swill have received particular attention, and are now in good condition.

The licenses and permits granted during the year were :

Licenses to remove grease, bones, etc. . . .	106
Numbers assigned by the Board of Health . . .	764
Permits granted by Superintendent of Streets . .	679
Licenses granted by Secretary of State (city) . .	180
“ “ “ “ “ “ (county) . .	117
“ “ “ “ “ “ (taxpayers), . .	80

Respectfully submitted,

JOHN McLoughlin,
Superintendent of Pedlers.

APPENDIX.

The following regulations of the Board of Health are still in force :

Boston, September 10, 1892.

It was ordered that hereafter no articles of clothing or bedding in use shall be thrown overboard from any vessel in Boston harbor without the written consent of the Board of Health or the quarantine physician; nor shall any such articles be removed from any vessel at her dock without such permission; such articles shall no longer be brought to the city to be destroyed, but shall be burned in the harbor under the supervision of the quarantine physician, in the furnaces of the steamers.

Boston, October 17, 1892.

Whereas, the storing and handling of oyster shells near business and residential districts are attended by noisome and injurious odors, it is hereby ordered that no oyster shells shall be kept in or removed from any building, yard, or other place within the built-up portions of the city, except by written permission from the Board of Health, and only at such times and in such manner as shall be prescribed in said permit.

FILLING FOR PONDS AND WET LANDS.

APRIL 10, 1893.

Whereas, in the opinion of the Board of Health the use of refuse materials in filling ponds and bodies of water and wet lands is a nuisance, source of filth, and cause of sickness, it is therefore ordered that no person shall throw into any pond or body of water, or upon any land which at any time is covered with tide water, within the limits of the city, any refuse animal or vegetable matter or any perishable material or rubbish or filth of any kind whatsoever, between the first day of April and the first day of November, except in accordance with a written permit issued from the Board of Health to the owner of such pond or land, and no owner of such pond or land shall refuse or neglect

to remove therefrom any refuse or filth hereinbefore described which shall be thrown or placed in or upon the same within the period hereinbefore specified.

TEXAN CATTLE.

JULY 29, 1893.

Whereas, Northern and Western cattle exposed to those coming from Texas, or to the premises which have been used by Texan cattle, are likely to contract a disease known as Texas fever among cattle, it is, therefore, ordered that none of the cattle arriving from Texas shall be driven over any road or across any lands which are used or liable to be used by other cattle, nor in any way exposed to such other cattle within the limits of Boston, except within the yards immediately connected with the abattoir.

CONTAGIOUS DISEASES.

JULY 1, 1895.

At a meeting of the Board of Health, this day, the following regulation was adopted :

1. Whoever is infected with small-pox, scarlet fever, diphtheria, or membranous croup shall immediately proceed to some isolated place or room designated by the Board of Health, and no person who has been so affected shall leave such place or room, and no article shall be removed from such place or room, until the Board of Health shall certify in writing that all danger of communicating such disease to others is passed.

2. Every parent or guardian of any child or ward infected with small-pox, scarlet fever, diphtheria, or membranous croup shall immediately cause such child or ward to be conveyed to some isolated place or room approved by the Board of Health, and no parent or guardian shall permit such child or ward to remove from such place or room until the Board of Health shall find and certify in writing that all danger of communicating such disease to others has passed.

3. No person other than the attending physician, nurse, and agents of the Board of Health shall enter any apartment or other place set apart for the treatment of small-pox, scarlet fever, diphtheria, or membranous croup until the Board of Health shall certify in writing that such apartment or place has been satisfactorily disinfected.

4. No person having the care of any other person who has been affected with small-pox, scarlet fever, diphtheria, or mem-

braneous croup shall advise or permit such other person to leave any place designated by the Board of Health as a place of isolation of such infected person before said Board of Health shall have certified in writing that such person can leave such designated place without danger to others.

5. No physician who has been in attendance upon any person who has been infected with small-pox, scarlet fever, diphtheria, or membraneous croup shall advise or knowingly permit such person to leave any place designated by the Board of Health as a place of isolation of such infected person before said Board of Health shall have certified in writing that such infected person can leave such place without danger to others.

STORAGE OF FRUIT.

Boston, August 3, 1893.

At a meeting of the Board of Health, this day, the following regulation was passed :

No person shall store or keep or allow to be stored or kept in any building of which he is the owner or occupant, and which is in use in whole or in part as a dwelling-house, any fruit for merchandise except in accordance with a written permit from the Board of Health.

Cows.

Boston, April 26, 1892.

Whereas, cows' milk is one of the most common and necessary articles of food, and is oftentimes seriously impaired in usefulness and rendered dangerous to health by the want of proper care in its production or subsequent treatment or handling; it is, therefore, ordered that the following regulation be and is hereby adopted :

SECTION 1. No person shall use any building as a stable for cows, unless it contains at least 1,000 cubic feet of space for each animal, is well lighted and ventilated, has tight roof and floors, good drainage, a supply of pure water, and all other necessary means for maintaining the health and good condition of the cows, and has been approved by the Board of Health.

SECT. 2. Every person using any such building shall keep the same and the premises connected therewith, and all land used for pasturage of the cows, clean and free from filth.

SECT. 3. Every person keeping a milch cow shall permit it to be examined from time to time, as to its freedom from disease, by a veterinarian designated by the Board of Health.

SECT. 4. No person having an infectious disease, or having recently been in contact with any such person, shall milk cows or handle cans, measures, or other vessels used for milk intended for sale, or in any way take part or assist in handling milk intended for sale, until all danger of communicating such disease to other persons shall have passed.

SECT. 5. No person shall sell or use for human food the milk of a diseased cow, or permit such milk to be mixed with other milk, nor until it has been boiled, shall sell or use such milk, or any mixture of such milk, for food of swine or other animals.

